

**MAIN SITE SUBSURFACE SOIL**

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	1,1,1-Trichloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	186	Lilliefors Test Statistic	0.405311
Number of Unique Samples	54	Lilliefors 5% Critical Value	0.064965
Minimum	0.0006	Data not normal at 5% significance level	
Maximum	3.8		
Mean	0.171831	95% UCL (Assuming Normal Distribution)	
Median	0.003	Student's-t UCL	0.237042
Standard Deviation	0.537986		
Variance	0.289429	Gamma Distribution Test	
Coefficient of Variation	3.13091	A-D Test Statistic	25.78499
Skewness	4.354155	A-D 5% Critical Value	0.889413
		K-S Test Statistic	0.313888
Gamma Statistics		K-S 5% Critical Value	0.073706
k hat	0.254525	Data do not follow gamma distribution	
k star (bias corrected)	0.254004	at 5% significance level	
Theta hat	0.675103		
Theta star	0.676488	95% UCLs (Assuming Gamma Distribution)	
nu hat	94.68332	Approximate Gamma UCL	0.222212
nu star	94.4895	Adjusted Gamma UCL	0.222657
Approx. Chi Square Value (.05)	73.06636		
Adjusted Level of Significance	0.04871	Lognormal Distribution Test	
Adjusted Chi Square Value	72.92018	Lilliefors Test Statistic	0.309674
		Lilliefors 5% Critical Value	0.064965
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.418581		
Maximum of log data	1.335001	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.543825	95% H-UCL	0.201698
Standard Deviation of log data	2.190161	95% Chebyshev (MVUE) UCL	0.247664
Variance of log data	4.796803	97.5% Chebyshev (MVUE) UCL	0.306294
		99% Chebyshev (MVUE) UCL	0.421461
		95% Non-parametric UCLs	
		CLT UCL	0.236715
		Adj-CLT UCL (Adjusted for skewness)	0.250172
		Mod-t UCL (Adjusted for skewness)	0.239141
		Jackknife UCL	0.237042
		Standard Bootstrap UCL	0.237581
		Bootstrap-t UCL	0.255803
RECOMMENDATION		Hall's Bootstrap UCL	0.2465
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.240898
		BCA Bootstrap UCL	0.272416
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.343776
		97.5% Chebyshev (Mean, Sd) UCL	0.418178
		99% Chebyshev (Mean, Sd) UCL	0.564324

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	1,1,2,2-Tetrachloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	176	Lilliefors Test Statistic	0.450964
Number of Unique Samples	28	Lilliefors 5% Critical Value	0.066785
Minimum	0.002	Data not normal at 5% significance level	
Maximum	21		
Mean	0.19902	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.398307
Standard Deviation	1.598835		
Variance	2.556273	Gamma Distribution Test	
Coefficient of Variation	8.033544	A-D Test Statistic	37.33286
Skewness	12.74586	A-D 5% Critical Value	0.90479
		K-S Test Statistic	0.427478
Gamma Statistics		K-S 5% Critical Value	0.077056
k hat	0.21994	Data do not follow gamma distribution	
k star (bias corrected)	0.219979	at 5% significance level	
Theta hat	0.904884		
Theta star	0.904724	95% UCLs (Assuming Gamma Distribution)	
nu hat	77.41875	Approximate Gamma UCL	0.264979
nu star	77.43245	Adjusted Gamma UCL	0.265605
Approx.Chi Square Value (.05)	58.15783		
Adjusted Level of Significance	0.048636	Lognormal Distribution Test	
Adjusted Chi Square Value	58.02066	Lilliefors Test Statistic	0.413768
		Lilliefors 5% Critical Value	0.066785
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.214608		
Maximum of log data	3.044522	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.910709	95% H-UCL	0.083501
Standard Deviation of log data	1.978373	95% Chebyshev (MVUE) UCL	0.103944
Variance of log data	3.913959	97.5% Chebyshev (MVUE) UCL	0.127066
		99% Chebyshev (MVUE) UCL	0.172484
		95% Non-parametric UCLs	
		CLT UCL	0.397252
		Adj-CLT UCL (Adjusted for skewness)	0.520972
		Mod-t UCL (Adjusted for skewness)	0.417605
		Jackknife UCL	0.398307
		Standard Bootstrap UCL	0.402732
		Bootstrap-t UCL	1.341039
RECOMMENDATION		Hall's Bootstrap UCL	1.048992
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.431705
		BCA Bootstrap UCL	0.671733
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.72434
		97.5% Chebyshev (Mean, Sd) UCL	0.951647
		99% Chebyshev (Mean, Sd) UCL	1.398146

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	1,1,2-Trichloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	170	Lilliefors Test Statistic	0.411393
Number of Unique Samples	27	Lilliefors 5% Critical Value	0.067953
Minimum	0.0007	Data not normal at 5% significance level	
Maximum	0.78		
Mean	0.043789	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.058346
Standard Deviation	0.114753		
Variance	0.013168	Gamma Distribution Test	
Coefficient of Variation	2.620565	A-D Test Statistic	34.27892
Skewness	4.08437	A-D 5% Critical Value	0.858069
		K-S Test Statistic	0.445751
Gamma Statistics		K-S 5% Critical Value	0.077075
k hat	0.343827	Data do not follow gamma distribution	
k star (bias corrected)	0.341681	at 5% significance level	
Theta hat	0.127359		
Theta star	0.128159	95% UCLs (Assuming Gamma Distribution)	
nu hat	116.9012	Approximate Gamma UCL	0.055125
nu star	116.1715	Adjusted Gamma UCL	0.055234
Approx. Chi Square Value (.05)	92.28208		
Adjusted Level of Significance	0.048588	Lognormal Distribution Test	
Adjusted Chi Square Value	92.10131	Lilliefors Test Statistic	0.41616
		Lilliefors 5% Critical Value	0.067953
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.26443		
Maximum of log data	-0.248461	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.089785	95% H-UCL	0.038495
Standard Deviation of log data	1.707615	95% Chebyshev (MVUE) UCL	0.04821
Variance of log data	2.915947	97.5% Chebyshev (MVUE) UCL	0.057852
		99% Chebyshev (MVUE) UCL	0.07679
		95% Non-parametric UCLs	
		CLT UCL	0.058266
		Adj-CLT UCL (Adjusted for skewness)	0.061212
		Mod-t UCL (Adjusted for skewness)	0.058805
		Jackknife UCL	0.058346
		Standard Bootstrap UCL	0.057639
		Bootstrap-t UCL	0.063031
RECOMMENDATION		Hall's Bootstrap UCL	0.060917
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.059459
		BCA Bootstrap UCL	0.066129
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.082153
		97.5% Chebyshev (Mean, Sd) UCL	0.098753
		99% Chebyshev (Mean, Sd) UCL	0.13136

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	1,1-Dichloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	180	Lilliefors Test Statistic	0.39916
Number of Unique Samples	47	Lilliefors 5% Critical Value	0.066039
Minimum	0.0006	Data not normal at 5% significance level	
Maximum	3.3		
Mean	0.139044	95% UCL (Assuming Normal Distribution)	
Median	0.003	Student's-t UCL	0.194949
Standard Deviation	0.453631		
Variance	0.205781	Gamma Distribution Test	
Coefficient of Variation	3.262487	A-D Test Statistic	29.39832
Skewness	4.683062	A-D 5% Critical Value	0.888663
		K-S Test Statistic	0.363974
Gamma Statistics		K-S 5% Critical Value	0.075379
k hat	0.255964	Data do not follow gamma distribution	
k star (bias corrected)	0.255402	at 5% significance level	
Theta hat	0.543218		
Theta star	0.544414	95% UCLs (Assuming Gamma Distribution)	
nu hat	92.14717	Approximate Gamma UCL	0.180497
nu star	91.94472	Adjusted Gamma UCL	0.180876
Approx. Chi Square Value (.05)	70.82895		
Adjusted Level of Significance	0.048667	Lognormal Distribution Test	
Adjusted Chi Square Value	70.68029	Lilliefors Test Statistic	0.344613
		Lilliefors 5% Critical Value	0.066039
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.418581		
Maximum of log data	1.193922	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.737374	95% H-UCL	0.135007
Standard Deviation of log data	2.105766	95% Chebyshev (MVUE) UCL	0.166687
Variance of log data	4.43425	97.5% Chebyshev (MVUE) UCL	0.205315
		99% Chebyshev (MVUE) UCL	0.281194
		95% Non-parametric UCLs	
		CLT UCL	0.19466
		Adj-CLT UCL (Adjusted for skewness)	0.20727
		Mod-t UCL (Adjusted for skewness)	0.196916
		Jackknife UCL	0.194949
		Standard Bootstrap UCL	0.195656
		Bootstrap-t UCL	0.218387
RECOMMENDATION		Hall's Bootstrap UCL	0.204059
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.19853
		BCA Bootstrap UCL	0.228873
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.286426
		97.5% Chebyshev (Mean, Sd) UCL	0.350198
		99% Chebyshev (Mean, Sd) UCL	0.475466

General Statistics

Data File	P:\W9-GVT\ARMY\SAEPIH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	1,1-Dichloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	174	Lilliefors Test Statistic	0.386339
Number of Unique Samples	33	Lilliefors 5% Critical Value	0.067167
Minimum	0.0006	Data not normal at 5% significance level	
Maximum	1.2		
Mean	0.066769	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.090729
Standard Deviation	0.191117		
Variance	0.036526	Gamma Distribution Test	
Coefficient of Variation	2.862367	A-D Test Statistic	32.37399
Skewness	4.324034	A-D 5% Critical Value	0.868244
		K-S Test Statistic	0.42679
Gamma Statistics		K-S 5% Critical Value	0.076376
k hat	0.302157	Data do not follow gamma distribution	
k star (bias corrected)	0.300779	at 5% significance level	
Theta hat	0.220974		
Theta star	0.221987	95% UCLs (Assuming Gamma Distribution)	
nu hat	105.1506	Approximate Gamma UCL	0.085169
nu star	104.671	Adjusted Gamma UCL	0.085342
Approx. Chi Square Value (.05)	82.05781		
Adjusted Level of Significance	0.048621	Lognormal Distribution Test	
Adjusted Chi Square Value	81.8917	Lilliefors Test Statistic	0.399776
		Lilliefors 5% Critical Value	0.067167
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.418581		
Maximum of log data	0.182322	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.985994	95% H-UCL	0.060715
Standard Deviation of log data	1.872439	95% Chebyshev (MVUE) UCL	0.075917
Variance of log data	3.506028	97.5% Chebyshev (MVUE) UCL	0.092155
		99% Chebyshev (MVUE) UCL	0.124052
		95% Non-parametric UCLs	
		CLT UCL	0.090601
		Adj-CLT UCL (Adjusted for skewness)	0.095675
		Mod-t UCL (Adjusted for skewness)	0.09152
		Jackknife UCL	0.090729
		Standard Bootstrap UCL	0.09048
		Bootstrap-t UCL	0.097921
RECOMMENDATION		Hall's Bootstrap UCL	0.095968
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.092102
		BCA Bootstrap UCL	0.104965
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.129923
		97.5% Chebyshev (Mean, Sd) UCL	0.15725
		99% Chebyshev (Mean, Sd) UCL	0.210928

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	1,2-Dichloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	110	Lilliefors Test Statistic	0.488778
Number of Unique Samples	15	Lilliefors 5% Critical Value	0.084477
Minimum	0.0008	Data not normal at 5% significance level	
Maximum	11.5		
Mean	0.180216	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.35978
Standard Deviation	1.13522		
Variance	1.288724	Gamma Distribution Test	
Coefficient of Variation	6.299205	A-D Test Statistic	36.77907
Skewness	9.349761	A-D 5% Critical Value	0.919213
		K-S Test Statistic	0.541404
Gamma Statistics		K-S 5% Critical Value	0.096459
k hat	0.194176	Data do not follow gamma distribution	
k star (bias corrected)	0.194941	at 5% significance level	
Theta hat	0.928106		
Theta star	0.924465	95% UCLs (Assuming Gamma Distribution)	
nu hat	42.71881	Approximate Gamma UCL	0.267721
nu star	42.88708	Adjusted Gamma UCL	0.269142
Approx. Chi Square Value (.05)	28.86947		
Adjusted Level of Significance	0.047818	Lognormal Distribution Test	
Adjusted Chi Square Value	28.717	Lilliefors Test Statistic	0.459501
		Lilliefors 5% Critical Value	0.084477
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.130899		
Maximum of log data	2.442347	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.521011	95% H-UCL	0.025478
Standard Deviation of log data	1.667521	95% Chebyshev (MVUE) UCL	0.031392
Variance of log data	2.780626	97.5% Chebyshev (MVUE) UCL	0.038222
		99% Chebyshev (MVUE) UCL	0.051637
		95% Non-parametric UCLs	
		CLT UCL	0.358254
		Adj-CLT UCL (Adjusted for skewness)	0.461356
		Mod-t UCL (Adjusted for skewness)	0.375862
		Jackknife UCL	0.35978
		Standard Bootstrap UCL	0.356693
		Bootstrap-t UCL	0.834018
RECOMMENDATION		Hall's Bootstrap UCL	0.898347
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.382159
		BCA Bootstrap UCL	0.575792
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.652019
		97.5% Chebyshev (Mean, Sd) UCL	0.856168
		99% Chebyshev (Mean, Sd) UCL	1.25718

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	1,2-Dichloroethene (total)		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	77	Lilliefors Test Statistic	0.476364
Number of Unique Samples	15	Lilliefors 5% Critical Value	0.100969
Minimum	0.002	Data not normal at 5% significance level	
Maximum	2.4		
Mean	0.097448	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.160427
Standard Deviation	0.331884		
Variance	0.110147	Gamma Distribution Test	
Coefficient of Variation	3.40575	A-D Test Statistic	21.29091
Skewness	5.14955	A-D 5% Critical Value	0.890038
		K-S Test Statistic	0.485849
Gamma Statistics		K-S 5% Critical Value	0.111735
k hat	0.244737	Data do not follow gamma distribution	
k star (bias corrected)	0.24386	at 5% significance level	
Theta hat	0.398175		
Theta star	0.399607	95% UCLs (Assuming Gamma Distribution)	
nu hat	37.6895	Approximate Gamma UCL	0.149244
nu star	37.55441	Adjusted Gamma UCL	0.150478
Approx. Chi Square Value (.05)	24.52089		
Adjusted Level of Significance	0.046883	Lognormal Distribution Test	
Adjusted Chi Square Value	24.31991	Lilliefors Test Statistic	0.427332
		Lilliefors 5% Critical Value	0.100969
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.214608		
Maximum of log data	0.875469	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.240657	95% H-UCL	0.054561
Standard Deviation of log data	1.827344	95% Chebyshev (MVUE) UCL	0.062448
Variance of log data	3.339185	97.5% Chebyshev (MVUE) UCL	0.077948
		99% Chebyshev (MVUE) UCL	0.108394
		95% Non-parametric UCLs	
		CLT UCL	0.159659
		Adj-CLT UCL (Adjusted for skewness)	0.183375
		Mod-t UCL (Adjusted for skewness)	0.164126
		Jackknife UCL	0.160427
		Standard Bootstrap UCL	0.15992
		Bootstrap-t UCL	0.216948
RECOMMENDATION		Hall's Bootstrap UCL	0.406367
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.164539
		BCA Bootstrap UCL	0.225253
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.262309
		97.5% Chebyshev (Mean, Sd) UCL	0.333644
		99% Chebyshev (Mean, Sd) UCL	0.473769

*Cis + trans used  
total not in  
EPCs*

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	Benzene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	177	Lilliefors Test Statistic	0.382983
Number of Unique Samples	36	Lilliefors 5% Critical Value	0.066596
Minimum	0.0003	Data not normal at 5% significance level	
Maximum	2.3		
Mean	0.085693	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.12135
Standard Deviation	0.286886		
Variance	0.082303	Gamma Distribution Test	
Coefficient of Variation	3.347822	A-D Test Statistic	26.88318
Skewness	5.759683	A-D 5% Critical Value	0.884822
		K-S Test Statistic	0.414172
Gamma Statistics		K-S 5% Critical Value	0.076098
k hat	0.264393	Data do not follow gamma distribution	
k star (bias corrected)	0.263678	at 5% significance level	
Theta hat	0.324114		
Theta star	0.324992	95% UCLs (Assuming Gamma Distribution)	
nu hat	93.59497	Approximate Gamma UCL	0.111006
nu star	93.34195	Adjusted Gamma UCL	0.111242
Approx. Chi Square Value (.05)	72.05689		
Adjusted Level of Significance	0.048644	Lognormal Distribution Test	
Adjusted Chi Square Value	71.90432	Lilliefors Test Statistic	0.362684
		Lilliefors 5% Critical Value	0.066596
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-8.111728		
Maximum of log data	0.832909	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.119273	95% H-UCL	0.093312
Standard Deviation of log data	2.108765	95% Chebyshev (MVUE) UCL	0.114995
Variance of log data	4.446891	97.5% Chebyshev (MVUE) UCL	0.141764
		99% Chebyshev (MVUE) UCL	0.194345
		95% Non-parametric UCLs	
		CLT UCL	0.121162
		Adj-CLT UCL (Adjusted for skewness)	0.131137
		Mod-t UCL (Adjusted for skewness)	0.122906
		Jackknife UCL	0.12135
		Standard Bootstrap UCL	0.12095
		Bootstrap-t UCL	0.144535
RECOMMENDATION		Hall's Bootstrap UCL	0.148843
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.123121
		BCA Bootstrap UCL	0.143724
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.179687
		97.5% Chebyshev (Mean, Sd) UCL	0.220358
		99% Chebyshev (Mean, Sd) UCL	0.300249

General Statistics

Data File	P:\W9-GVTARMY\SAEPI\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Chlorobenzene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	181	Lilliefors Test Statistic	0.441513
Number of Unique Samples	35	Lilliefors 5% Critical Value	0.065856
Minimum	0.0003	Data not normal at 5% significance level	
Maximum	19		
Mean	0.214002	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.392497
Standard Deviation	1.452438		
Variance	2.109575	Gamma Distribution Test	
Coefficient of Variation	6.78704	A-D Test Statistic	35.33294
Skewness	12.23191	A-D 5% Critical Value	0.904199
		K-S Test Statistic	0.413947
Gamma Statistics		K-S 5% Critical Value	0.075611
k hat	0.221456	Data do not follow gamma distribution	
k star (bias corrected)	0.221469	at 5% significance level	
Theta hat	0.966338		
Theta star	0.966282	95% UCLs (Assuming Gamma Distribution)	
nu hat	80.16721	Approximate Gamma UCL	0.283411
nu star	80.17181	Adjusted Gamma UCL	0.28405
Approx. Chi Square Value (.05)	60.53716		
Adjusted Level of Significance	0.048674	Lognormal Distribution Test	
Adjusted Chi Square Value	60.40098	Lilliefors Test Statistic	0.401452
		Lilliefors 5% Critical Value	0.065856
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-8.111728		
Maximum of log data	2.944439	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.811985	95% H-UCL	0.120737
Standard Deviation of log data	2.091698	95% Chebyshev (MVUE) UCL	0.149333
Variance of log data	4.375199	97.5% Chebyshev (MVUE) UCL	0.183734
		99% Chebyshev (MVUE) UCL	0.251308
		95% Non-parametric UCLs	
		CLT UCL	0.391578
		Adj-CLT UCL (Adjusted for skewness)	0.496458
		Mod-t UCL (Adjusted for skewness)	0.408856
		Jackknife UCL	0.392497
		Standard Bootstrap UCL	0.385531
		Bootstrap-t UCL	0.886132
RECOMMENDATION		Hall's Bootstrap UCL	0.953061
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.42501
		BCA Bootstrap UCL	0.609978
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.684583
		97.5% Chebyshev (Mean, Sd) UCL	0.888204
		99% Chebyshev (Mean, Sd) UCL	1.288179

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Chloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	134	Lilliefors Test Statistic	0.385541
Number of Unique Samples	13	Lilliefors 5% Critical Value	0.076539
Minimum	0.004	Data not normal at 5% significance level	
Maximum	0.038		
Mean	0.005832	95% UCL (Assuming Normal Distribution)	
Median	0.005	Student's-t UCL	0.006381
Standard Deviation	0.003839		
Variance	1.47E-005	Gamma Distribution Test	
Coefficient of Variation	0.658226	A-D Test Statistic	20.0624
Skewness	6.89272	A-D 5% Critical Value	0.753511
		K-S Test Statistic	0.323493
Gamma Statistics		K-S 5% Critical Value	0.080727
k hat	7.275999	Data do not follow gamma distribution	
k star (bias corrected)	7.118078	at 5% significance level	
Theta hat	0.000802		
Theta star	0.000819	95% UCLs (Assuming Gamma Distribution)	
nu hat	1949.968	Approximate Gamma UCL	0.006156
nu star	1907.645	Adjusted Gamma UCL	0.00616
Approx. Chi Square Value (.05)	1807.174		
Adjusted Level of Significance	0.048209	Lognormal Distribution Test	
Adjusted Chi Square Value	1806.124	Lilliefors Test Statistic	0.271063
		Lilliefors 5% Critical Value	0.076539
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-5.521461		
Maximum of log data	-3.270169	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.21467	95% H-UCL	0.005928
Standard Deviation of log data	0.292848	95% Chebyshev (MVUE) UCL	0.00631
Variance of log data	0.08576	97.5% Chebyshev (MVUE) UCL	0.006587
		99% Chebyshev (MVUE) UCL	0.007129
		95% Non-parametric UCLs	
		CLT UCL	0.006378
		Adj-CLT UCL (Adjusted for skewness)	0.006589
		Mod-t UCL (Adjusted for skewness)	0.006414
		Jackknife UCL	0.006381
		Standard Bootstrap UCL	0.006369
		Bootstrap-t UCL	0.007377
RECOMMENDATION		Hall's Bootstrap UCL	0.008411
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.006425
		BCA Bootstrap UCL	0.006336
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	0.007278
or Modified-t UCL		97.5% Chebyshev (Mean, Sd) UCL	0.007903
		99% Chebyshev (Mean, Sd) UCL	0.009132

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Cis-1,2-Dichloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	110	Lilliefors Test Statistic	0.461988
Number of Unique Samples	38	Lilliefors 5% Critical Value	0.084477
Minimum	0.0005	Data not normal at 5% significance level	
Maximum	86		
Mean	1.871112	95% UCL (Assuming Normal Distribution)	
Median	0.003	Student's-t UCL	3.373287
Standard Deviation	9.496921		
Variance	90.19151	Gamma Distribution Test	
Coefficient of Variation	5.07555	A-D Test Statistic	19.26889
Skewness	7.212801	A-D 5% Critical Value	0.955657
		K-S Test Statistic	0.357071
Gamma Statistics		K-S 5% Critical Value	0.097743
k hat	0.162563	Data do not follow gamma distribution	
k star (bias corrected)	0.16419	at 5% significance level	
Theta hat	11.51008		
Theta star	11.39602	95% UCLs (Assuming Gamma Distribution)	
nu hat	35.76383	Approximate Gamma UCL	2.892761
nu star	36.12179	Adjusted Gamma UCL	2.909714
Approx. Chi Square Value (.05)	23.3645		
Adjusted Level of Significance	0.047818	Lognormal Distribution Test	
Adjusted Chi Square Value	23.22837	Lilliefors Test Statistic	0.25369
		Lilliefors 5% Critical Value	0.084477
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.600902		
Maximum of log data	4.454347	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.045794	95% H-UCL	1.838105
Standard Deviation of log data	2.68153	95% Chebyshev (MVUE) UCL	1.675985
Variance of log data	7.190603	97.5% Chebyshev (MVUE) UCL	2.161061
		99% Chebyshev (MVUE) UCL	3.113901
		95% Non-parametric UCLs	
		CLT UCL	3.36052
		Adj-CLT UCL (Adjusted for skewness)	4.025907
		Mod-t UCL (Adjusted for skewness)	3.477074
		Jackknife UCL	3.373287
		Standard Bootstrap UCL	3.337574
		Bootstrap-t UCL	5.490452
RECOMMENDATION		Hall's Bootstrap UCL	7.427132
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	3.418373
		BCA Bootstrap UCL	4.619336
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	5.818077
		97.5% Chebyshev (Mean, Sd) UCL	7.525932
		99% Chebyshev (Mean, Sd) UCL	10.88068

General Statistics

Data File	P:\W9-GVTARMYSAEPIHH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	Ethyl benzene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	185	Lilliefors Test Statistic	0.440537
Number of Unique Samples	41	Lilliefors 5% Critical Value	0.06514
Minimum	0.0002	Data not normal at 5% significance level	
Maximum	12		
Mean	0.335749	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.530387
Standard Deviation	1.601379		
Variance	2.564415	Gamma Distribution Test	
Coefficient of Variation	4.76957	A-D Test Statistic	35.18136
Skewness	6.162087	A-D 5% Critical Value	0.912949
		K-S Test Statistic	0.400081
Gamma Statistics		K-S 5% Critical Value	0.074755
k hat	0.202169	Data do not follow gamma distribution at 5% significance level	
k star (bias corrected)	0.202494		
Theta hat	1.660739		
Theta star	1.658072	95% UCLs (Assuming Gamma Distribution)	
nu hat	74.80238	Approximate Gamma UCL	0.449332
nu star	74.9227	Adjusted Gamma UCL	0.450361
Approx. Chi Square Value (.05)	55.98361		
Adjusted Level of Significance	0.048703	Lognormal Distribution Test	
Adjusted Chi Square Value	55.85575	Lilliefors Test Statistic	0.38537
		Lilliefors 5% Critical Value	0.06514
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-8.517193		
Maximum of log data	2.484907	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.725399	95% H-UCL	0.214812
Standard Deviation of log data	2.280749	95% Chebyshev (MVUE) UCL	0.260553
Variance of log data	5.201818	97.5% Chebyshev (MVUE) UCL	0.324051
		99% Chebyshev (MVUE) UCL	0.44878
		95% Non-parametric UCLs	
		CLT UCL	0.529407
		Adj-CLT UCL (Adjusted for skewness)	0.586401
		Mod-t UCL (Adjusted for skewness)	0.539277
		Jackknife UCL	0.530387
		Standard Bootstrap UCL	0.531828
		Bootstrap-t UCL	0.649296
RECOMMENDATION		Hall's Bootstrap UCL	0.516405
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.544372
		BCA Bootstrap UCL	0.655021
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.848947
		97.5% Chebyshev (Mean, Sd) UCL	1.071009
		99% Chebyshev (Mean, Sd) UCL	1.507205

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Methyl bromide		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	167	Lilliefors Test Statistic	0.43214
Number of Unique Samples	31	Lilliefors 5% Critical Value	0.068561
Minimum	0.002	Data not normal at 5% significance level	
Maximum	11.5		
Mean	0.159901	95% UCL (Assuming Normal Distribution)	
Median	0.0055	Student's-t UCL	0.278143
Standard Deviation	0.923786		
Variance	0.85338	Gamma Distribution Test	
Coefficient of Variation	5.777229	A-D Test Statistic	36.87447
Skewness	11.38803	A-D 5% Critical Value	0.881916
		K-S Test Statistic	0.457472
Gamma Statistics		K-S 5% Critical Value	0.078819
k hat	0.27049	Data do not follow gamma distribution at 5% significance level	
k star (bias corrected)	0.269623		
Theta hat	0.591154		
Theta star	0.593055	95% UCLs (Assuming Gamma Distribution)	
nu hat	90.34365	Approximate Gamma UCL	0.208181
nu star	90.05404	Adjusted Gamma UCL	0.208659
Approx. Chi Square Value (.05)	69.16943		
Adjusted Level of Significance	0.048563	Lognormal Distribution Test	
Adjusted Chi Square Value	69.01104	Lilliefors Test Statistic	0.409943
		Lilliefors 5% Critical Value	0.068561
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.214608		
Maximum of log data	2.442347	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.425869	95% H-UCL	0.084116
Standard Deviation of log data	1.761749	95% Chebyshev (MVUE) UCL	0.105292
Variance of log data	3.103758	97.5% Chebyshev (MVUE) UCL	0.126975
		99% Chebyshev (MVUE) UCL	0.169566
		95% Non-parametric UCLs	
		CLT UCL	0.277483
		Adj-CLT UCL (Adjusted for skewness)	0.344794
		Mod-t UCL (Adjusted for skewness)	0.288642
		Jackknife UCL	0.278143
		Standard Bootstrap UCL	0.272965
		Bootstrap-t UCL	0.57612
RECOMMENDATION		Hall's Bootstrap UCL	0.662871
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.298192
		BCA Bootstrap UCL	0.378635
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.471496
		97.5% Chebyshev (Mean, Sd) UCL	0.606323
		99% Chebyshev (Mean, Sd) UCL	0.871165

*Assumed as Core FOD*

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Tetrachloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	184	Lilliefors Test Statistic	0.446959
Number of Unique Samples	52	Lilliefors 5% Critical Value	0.065317
Minimum	0.0003	Data not normal at 5% significance level	
Maximum	21		
Mean	0.210085	95% UCL (Assuming Normal Distribution)	
Median	0.003	Student's-t UCL	0.401822
Standard Deviation	1.573196		
Variance	2.474947	Gamma Distribution Test	
Coefficient of Variation	7.488388	A-D Test Statistic	28.27599
Skewness	12.79288	A-D 5% Critical Value	0.903988
		K-S Test Statistic	0.354063
Gamma Statistics		K-S 5% Critical Value	0.074749
k hat	0.222047	Data do not follow gamma distribution	
k star (bias corrected)	0.22205	at 5% significance level	
Theta hat	0.946126		
Theta star	0.946114	95% UCLs (Assuming Gamma Distribution)	
nu hat	81.71344	Approximate Gamma UCL	0.277424
nu star	81.71449	Adjusted Gamma UCL	0.278033
Approx. Chi Square Value (.05)	61.87981		
Adjusted Level of Significance	0.048696	Lognormal Distribution Test	
Adjusted Chi Square Value	61.74432	Lilliefors Test Statistic	0.326608
		Lilliefors 5% Critical Value	0.065317
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-8.111728		
Maximum of log data	3.044522	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.820374	95% H-UCL	0.152055
Standard Deviation of log data	2.186616	95% Chebyshev (MVUE) UCL	0.186564
Variance of log data	4.781288	97.5% Chebyshev (MVUE) UCL	0.230774
		99% Chebyshev (MVUE) UCL	0.317616
		95% Non-parametric UCLs	
		CLT UCL	0.400851
		Adj-CLT UCL (Adjusted for skewness)	0.517724
		Mod-t UCL (Adjusted for skewness)	0.420051
		Jackknife UCL	0.401822
		Standard Bootstrap UCL	0.392609
		Bootstrap-t UCL	1.236761
RECOMMENDATION		Hall's Bootstrap UCL	0.993035
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.435021
		BCA Bootstrap UCL	0.591105
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.715619
		97.5% Chebyshev (Mean, Sd) UCL	0.934365
		99% Chebyshev (Mean, Sd) UCL	1.364047

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	trans-1,2-Dichloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	176	Lilliefors Test Statistic	0.382329
Number of Unique Samples	31	Lilliefors 5% Critical Value	0.066785
Minimum	0.001	Data not normal at 5% significance level	
Maximum	1.8		
Mean	0.080892	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.109794
Standard Deviation	0.231874		
Variance	0.053766	Gamma Distribution Test	
Coefficient of Variation	2.866463	A-D Test Statistic	33.10246
Skewness	4.461714	A-D 5% Critical Value	0.873061
		K-S Test Statistic	0.424024
Gamma Statistics		K-S 5% Critical Value	0.075982
k hat	0.290517	Data do not follow gamma distribution	
k star (bias corrected)	0.289352	at 5% significance level	
Theta hat	0.278442		
Theta star	0.279562	95% UCLs (Assuming Gamma Distribution)	
nu hat	102.2618	Approximate Gamma UCL	0.103554
nu star	101.852	Adjusted Gamma UCL	0.103765
Approx. Chi Square Value (.05)	79.5623		
Adjusted Level of Significance	0.048636	Lognormal Distribution Test	
Adjusted Chi Square Value	79.40071	Lilliefors Test Statistic	0.402547
		Lilliefors 5% Critical Value	0.066785
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.907755		
Maximum of log data	0.587787	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.900692	95% H-UCL	0.075486
Standard Deviation of log data	1.931341	95% Chebyshev (MVUE) UCL	0.09421
Variance of log data	3.730078	97.5% Chebyshev (MVUE) UCL	0.114791
		99% Chebyshev (MVUE) UCL	0.155217
		95% Non-parametric UCLs	
		CLT UCL	0.109641
		Adj-CLT UCL (Adjusted for skewness)	0.115922
		Mod-t UCL (Adjusted for skewness)	0.110774
		Jackknife UCL	0.109794
		Standard Bootstrap UCL	0.109478
		Bootstrap-t UCL	0.120661
RECOMMENDATION		Hall's Bootstrap UCL	0.118358
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.110116
		BCA Bootstrap UCL	0.127568
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.157078
		97.5% Chebyshev (Mean, Sd) UCL	0.190043
		99% Chebyshev (Mean, Sd) UCL	0.254798

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Trichloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	193	Lilliefors Test Statistic	0.432611
Number of Unique Samples	68	Lilliefors 5% Critical Value	0.063776
Minimum	0.0004	Data not normal at 5% significance level	
Maximum	29		
Mean	0.489152	95% UCL (Assuming Normal Distribution)	
Median	0.003	Student's-t UCL	0.831745
Standard Deviation	2.879585		
Variance	8.292011	Gamma Distribution Test	
Coefficient of Variation	5.886895	A-D Test Statistic	24.51504
Skewness	8.65229	A-D 5% Critical Value	0.918171
		K-S Test Statistic	0.258167
Gamma Statistics		K-S 5% Critical Value	0.072607
k hat	0.197765	Data do not follow gamma distribution	
k star (bias corrected)	0.198145	at 5% significance level	
Theta hat	2.473405		
Theta star	2.468659	95% UCLs (Assuming Gamma Distribution)	
nu hat	76.33711	Approximate Gamma UCL	0.652515
nu star	76.48386	Adjusted Gamma UCL	0.65393
Approx. Chi Square Value (.05)	57.33541		
Adjusted Level of Significance	0.048756	Lognormal Distribution Test	
Adjusted Chi Square Value	57.21136	Lilliefors Test Statistic	0.241154
		Lilliefors 5% Critical Value	0.063776
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.824046		
Maximum of log data	3.367296	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.442799	95% H-UCL	0.529346
Standard Deviation of log data	2.50235	95% Chebyshev (MVUE) UCL	0.621885
Variance of log data	6.261754	97.5% Chebyshev (MVUE) UCL	0.781696
		99% Chebyshev (MVUE) UCL	1.095615
		95% Non-parametric UCLs	
		CLT UCL	0.830092
		Adj-CLT UCL (Adjusted for skewness)	0.96803
		Mod-t UCL (Adjusted for skewness)	0.853261
		Jackknife UCL	0.831745
		Standard Bootstrap UCL	0.82808
		Bootstrap-t UCL	1.541084
RECOMMENDATION		Hall's Bootstrap UCL	1.139629
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.83119
		BCA Bootstrap UCL	1.098946
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	1.392652
		97.5% Chebyshev (Mean, Sd) UCL	1.783597
		99% Chebyshev (Mean, Sd) UCL	2.551533

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Vinyl chloride		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	179	Lilliefors Test Statistic	0.422899
Number of Unique Samples	36	Lilliefors 5% Critical Value	0.066223
Minimum	0.004	Data not normal at 5% significance level	
Maximum	7.7		
Mean	0.171612	95% UCL (Assuming Normal Distribution)	
Median	0.0055	Student's-t UCL	0.258794
Standard Deviation	0.70544		
Variance	0.497645	Gamma Distribution Test	
Coefficient of Variation	4.110672	A-D Test Statistic	35.3344
Skewness	7.847168	A-D 5% Critical Value	0.878707
		K-S Test Statistic	0.413237
Gamma Statistics		K-S 5% Critical Value	0.075329
k hat	0.278068	Data do not follow gamma distribution	
k star (bias corrected)	0.277132	at 5% significance level	
Theta hat	0.617158		
Theta star	0.619243	95% UCLs (Assuming Gamma Distribution)	
nu hat	99.54822	Approximate Gamma UCL	0.220459
nu star	99.21315	Adjusted Gamma UCL	0.220907
Approx. Chi Square Value (.05)	77.23027		
Adjusted Level of Significance	0.048659	Lognormal Distribution Test	
Adjusted Chi Square Value	77.07387	Lilliefors Test Statistic	0.380022
		Lilliefors 5% Critical Value	0.066223
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-5.521461		
Maximum of log data	2.04122	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.273237	95% H-UCL	0.107133
Standard Deviation of log data	1.810182	95% Chebyshev (MVUE) UCL	0.134272
Variance of log data	3.276761	97.5% Chebyshev (MVUE) UCL	0.162056
		99% Chebyshev (MVUE) UCL	0.216634
		95% Non-parametric UCLs	
		CLT UCL	0.25834
		Adj-CLT UCL (Adjusted for skewness)	0.291385
		Mod-t UCL (Adjusted for skewness)	0.263948
		Jackknife UCL	0.258794
		Standard Bootstrap UCL	0.257998
		Bootstrap-t UCL	0.33801
RECOMMENDATION		Hall's Bootstrap UCL	0.576245
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.265112
		BCA Bootstrap UCL	0.310388
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.401444
		97.5% Chebyshev (Mean, Sd) UCL	0.500892
		99% Chebyshev (Mean, Sd) UCL	0.696239

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REVProUCL\SO-MainSt-InputFile.xls		
Variable:	Xylenes, Total		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	186	Lilliefors Test Statistic	0.463754
Number of Unique Samples	48	Lilliefors 5% Critical Value	0.064965
Minimum	0.0002	Data not normal at 5% significance level	
Maximum	78		
Mean	1.802502	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	3.055142
Standard Deviation	10.33416		
Variance	106.7949	Gamma Distribution Test	
Coefficient of Variation	5.733232	A-D Test Statistic	37.96756
Skewness	6.455036	A-D 5% Critical Value	1.009794
		K-S Test Statistic	0.373123
Gamma Statistics		K-S 5% Critical Value	0.077037
k hat	0.145979	Data do not follow gamma distribution	
k star (bias corrected)	0.147208	at 5% significance level	
Theta hat	12.34771		
Theta star	12.24456	95% UCLs (Assuming Gamma Distribution)	
nu hat	54.30407	Approximate Gamma UCL	2.54702
nu star	54.76153	Adjusted Gamma UCL	2.553923
Approx. Chi Square Value (.05)	38.75422		
Adjusted Level of Significance	0.04871	Lognormal Distribution Test	
Adjusted Chi Square Value	38.64947	Lilliefors Test Statistic	0.347442
		Lilliefors 5% Critical Value	0.064965
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-8.517193		
Maximum of log data	4.356709	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.696596	95% H-UCL	0.7978
Standard Deviation of log data	2.710413	95% Chebyshev (MVUE) UCL	0.881949
Variance of log data	7.34634	97.5% Chebyshev (MVUE) UCL	1.121127
		99% Chebyshev (MVUE) UCL	1.590947
		95% Non-parametric UCLs	
		CLT UCL	3.04887
		Adj-CLT UCL (Adjusted for skewness)	3.432084
		Mod-t UCL (Adjusted for skewness)	3.114916
		Jackknife UCL	3.055142
		Standard Bootstrap UCL	3.01823
		Bootstrap-t UCL	3.871085
RECOMMENDATION		Hall's Bootstrap UCL	2.897048
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	3.160494
		BCA Bootstrap UCL	3.974966
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	5.105404
		97.5% Chebyshev (Mean, Sd) UCL	6.534572
		99% Chebyshev (Mean, Sd) UCL	9.341896

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	Benzo[a]anthracene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	136	Lilliefors Test Statistic	0.364146
Number of Unique Samples	65	Lilliefors 5% Critical Value	0.075974
Minimum	0.007	Data not normal at 5% significance level	
Maximum	20		
Mean	2.093018	95% UCL (Assuming Normal Distribution)	
Median	0.19	Student's-t UCL	2.521647
Standard Deviation	3.018098		
Variance	9.108916	Gamma Distribution Test	
Coefficient of Variation	1.441984	A-D Test Statistic	14.54897
Skewness	2.011846	A-D 5% Critical Value	0.834862
		K-S Test Statistic	0.299336
Gamma Statistics		K-S 5% Critical Value	0.085496
k hat	0.436379	Data do not follow gamma distribution	
k star (bias corrected)	0.431655	at 5% significance level	
Theta hat	4.79633		
Theta star	4.848821	95% UCLs (Assuming Gamma Distribution)	
nu hat	118.6951	Approximate Gamma UCL	2.63143
nu star	117.4102	Adjusted Gamma UCL	2.63787
Approx. Chi Square Value (.05)	93.38714		
Adjusted Level of Significance	0.048235	Lognormal Distribution Test	
Adjusted Chi Square Value	93.15915	Lilliefors Test Statistic	0.248518
		Lilliefors 5% Critical Value	0.075974
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.961845		
Maximum of log data	2.995732	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-0.748457	95% H-UCL	5.131713
Standard Deviation of log data	1.929625	95% Chebyshev (MVUE) UCL	6.279882
Variance of log data	3.723454	97.5% Chebyshev (MVUE) UCL	7.728755
		99% Chebyshev (MVUE) UCL	10.57478
		95% Non-parametric UCLs	
		CLT UCL	2.518706
		Adj-CLT UCL (Adjusted for skewness)	2.566412
		Mod-t UCL (Adjusted for skewness)	2.529089
		Jackknife UCL	2.521647
		Standard Bootstrap UCL	2.515158
		Bootstrap-t UCL	2.576622
RECOMMENDATION		Hall's Bootstrap UCL	2.591695
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	2.522195
		BCA Bootstrap UCL	2.727301
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	3.2211
		97.5% Chebyshev (Mean, Sd) UCL	3.709222
		99% Chebyshev (Mean, Sd) UCL	4.668044

General Statistics

Data File	P:\W9-GVT\ARMYSAEPIHH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Benzo[a]pyrene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	138	Lilliefors Test Statistic	0.372871
Number of Unique Samples	65	Lilliefors 5% Critical Value	0.075421
Minimum	0.008	Data not normal at 5% significance level	
Maximum	16		
Mean	2.017047	95% UCL (Assuming Normal Distribution)	
Median	0.19	Student's-t UCL	2.416419
Standard Deviation	2.832979		
Variance	8.02577	Gamma Distribution Test	
Coefficient of Variation	1.404518	A-D Test Statistic	15.34155
Skewness	1.470572	A-D 5% Critical Value	0.832904
		K-S Test Statistic	0.301701
Gamma Statistics		K-S 5% Critical Value	0.084855
k hat	0.444576	Data do not follow gamma distribution at 5% significance level	
k star (bias corrected)	0.439742		
Theta hat	4.537012		
Theta star	4.586884	95% UCLs (Assuming Gamma Distribution)	
nu hat	122.703	Approximate Gamma UCL	2.525772
nu star	121.3689	Adjusted Gamma UCL	2.531754
Approx. Chi Square Value (.05)	96.92353		
Adjusted Level of Significance	0.048261	Lognormal Distribution Test	
Adjusted Chi Square Value	96.69451	Lilliefors Test Statistic	0.249519
		Lilliefors 5% Critical Value	0.075421
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.828314		
Maximum of log data	2.772589	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-0.7537	95% H-UCL	4.643138
Standard Deviation of log data	1.89138	95% Chebyshev (MVUE) UCL	5.712181
Variance of log data	3.577318	97.5% Chebyshev (MVUE) UCL	7.007594
		99% Chebyshev (MVUE) UCL	9.552182
		95% Non-parametric UCLs	
		CLT UCL	2.413719
		Adj-CLT UCL (Adjusted for skewness)	2.445976
		Mod-t UCL (Adjusted for skewness)	2.421451
		Jackknife UCL	2.416419
		Standard Bootstrap UCL	2.420773
		Bootstrap-t UCL	2.434239
RECOMMENDATION		Hall's Bootstrap UCL	2.454296
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	2.425982
		BCA Bootstrap UCL	2.643627
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	3.068236
		97.5% Chebyshev (Mean, Sd) UCL	3.523086
		99% Chebyshev (Mean, Sd) UCL	4.416551

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Benzo[b]fluoranthene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	138	Lilliefors Test Statistic	0.375256
Number of Unique Samples	65	Lilliefors 5% Critical Value	0.075421
Minimum	0.007	Data not normal at 5% significance level	
Maximum	15		
Mean	2.020033	95% UCL (Assuming Normal Distribution)	
Median	0.19	Student's-t UCL	2.41532
Standard Deviation	2.804007		
Variance	7.862456	Gamma Distribution Test	
Coefficient of Variation	1.3881	A-D Test Statistic	15.86375
Skewness	1.333174	A-D 5% Critical Value	0.832633
Gamma Statistics		K-S Test Statistic	0.314026
		K-S 5% Critical Value	0.084842
k hat	0.445685	Data do not follow gamma distribution	
k star (bias corrected)	0.440827	at 5% significance level	
Theta hat	4.532422		
Theta star	4.582369	95% UCLs (Assuming Gamma Distribution)	
nu hat	123.0091	Approximate Gamma UCL	2.528765
nu star	121.6683	Adjusted Gamma UCL	2.534746
Approx. Chi Square Value (.05)	97.19128		
Adjusted Level of Significance	0.048261	Lognormal Distribution Test	
Adjusted Chi Square Value	96.96193	Lilliefors Test Statistic	0.265987
		Lilliefors 5% Critical Value	0.075421
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.961845		
Maximum of log data	2.70805	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-0.748026	95% H-UCL	4.556925
Standard Deviation of log data	1.880928	95% Chebyshev (MVUE) UCL	5.61155
Variance of log data	3.537891	97.5% Chebyshev (MVUE) UCL	6.879103
		99% Chebyshev (MVUE) UCL	9.368966
		95% Non-parametric UCLs	
		CLT UCL	2.412648
		Adj-CLT UCL (Adjusted for skewness)	2.441592
		Mod-t UCL (Adjusted for skewness)	2.419835
		Jackknife UCL	2.41532
		Standard Bootstrap UCL	2.423576
		Bootstrap-t UCL	2.453674
RECOMMENDATION		Hall's Bootstrap UCL	2.431311
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	2.397663
		BCA Bootstrap UCL	2.593134
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	3.060471
		97.5% Chebyshev (Mean, Sd) UCL	3.510669
		99% Chebyshev (Mean, Sd) UCL	4.394997

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Benzo[k]fluoranthene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	138	Lilliefors Test Statistic	0.372633
Number of Unique Samples	65	Lilliefors 5% Critical Value	0.075421
Minimum	0.008	Data not normal at 5% significance level	
Maximum	12		
Mean	2.002678	95% UCL (Assuming Normal Distribution)	
Median	0.19	Student's-t UCL	2.38488
Standard Deviation	2.711186		
Variance	7.35053	Gamma Distribution Test	
Coefficient of Variation	1.353781	A-D Test Statistic	15.50824
Skewness	1.054292	A-D 5% Critical Value	0.831258
		K-S Test Statistic	0.309073
Gamma Statistics		K-S 5% Critical Value	0.08478
k hat	0.451317	Data do not follow gamma distribution	
k star (bias corrected)	0.446337	at 5% significance level	
Theta hat	4.437409		
Theta star	4.486923	95% UCLs (Assuming Gamma Distribution)	
nu hat	124.5634	Approximate Gamma UCL	2.503332
nu star	123.1889	Adjusted Gamma UCL	2.509213
Approx. Chi Square Value (.05)	98.55169		
Adjusted Level of Significance	0.048261	Lognormal Distribution Test	
Adjusted Chi Square Value	98.32069	Lilliefors Test Statistic	0.262126
		Lilliefors 5% Critical Value	0.075421
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.828314		
Maximum of log data	2.484907	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-0.735697	95% H-UCL	4.489367
Standard Deviation of log data	1.869188	95% Chebyshev (MVUE) UCL	5.53412
Variance of log data	3.493865	97.5% Chebyshev (MVUE) UCL	6.77857
		99% Chebyshev (MVUE) UCL	9.22305
		95% Non-parametric UCLs	
		CLT UCL	2.382296
		Adj-CLT UCL (Adjusted for skewness)	2.404428
		Mod-t UCL (Adjusted for skewness)	2.388332
		Jackknife UCL	2.38488
		Standard Bootstrap UCL	2.375251
		Bootstrap-t UCL	2.411753
RECOMMENDATION		Hall's Bootstrap UCL	2.4099
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	2.384069
		BCA Bootstrap UCL	2.551739
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	3.008674
		97.5% Chebyshev (Mean, Sd) UCL	3.44397
		99% Chebyshev (Mean, Sd) UCL	4.299024

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Dibenz[a,h]anthracene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	146	Lilliefors Test Statistic	0.303339
Number of Unique Samples	59	Lilliefors 5% Critical Value	0.073326
Minimum	0.025	Data not normal at 5% significance level	
Maximum	53.5		
Mean	2.597072	95% UCL (Assuming Normal Distribution)	
Median	0.19625	Student's-t UCL	3.281552
Standard Deviation	4.996049		
Variance	24.9605	Gamma Distribution Test	
Coefficient of Variation	1.923724	A-D Test Statistic	17.72714
Skewness	7.420466	A-D 5% Critical Value	0.822405
		K-S Test Statistic	0.306948
Gamma Statistics		K-S 5% Critical Value	0.082183
k hat	0.488374	Data do not follow gamma distribution	
k star (bias corrected)	0.482905	at 5% significance level	
Theta hat	5.31779		
Theta star	5.378013	95% UCLs (Assuming Gamma Distribution)	
nu hat	142.6053	Approximate Gamma UCL	3.196561
nu star	141.0084	Adjusted Gamma UCL	3.203157
Approx. Chi Square Value (.05)	114.5634		
Adjusted Level of Significance	0.048356	Lognormal Distribution Test	
Adjusted Chi Square Value	114.3275	Lilliefors Test Statistic	0.29798
		Lilliefors 5% Critical Value	0.073326
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-3.688879		
Maximum of log data	3.979682	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-0.350986	95% H-UCL	4.645549
Standard Deviation of log data	1.717461	95% Chebyshev (MVUE) UCL	5.793561
Variance of log data	2.949672	97.5% Chebyshev (MVUE) UCL	7.001155
		99% Chebyshev (MVUE) UCL	9.373239
		95% Non-parametric UCLs	
		CLT UCL	3.277179
		Adj-CLT UCL (Adjusted for skewness)	3.548502
		Mod-t UCL (Adjusted for skewness)	3.323873
		Jackknife UCL	3.281552
		Standard Bootstrap UCL	3.28458
		Bootstrap-t UCL	3.730018
RECOMMENDATION		Hall's Bootstrap UCL	6.352317
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	3.336829
		BCA Bootstrap UCL	3.977103
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	4.399372
		97.5% Chebyshev (Mean, Sd) UCL	5.179228
		99% Chebyshev (Mean, Sd) UCL	6.711105

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Indeno[1,2,3-cd]pyrene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	88	Lilliefors Test Statistic	0.452568
Number of Unique Samples	38	Lilliefors 5% Critical Value	0.094448
Minimum	0.005	Data not normal at 5% significance level	
Maximum	3.2		
Mean	0.238619	95% UCL (Assuming Normal Distribution)	
Median	0.177	Student's-t UCL	0.31256
Standard Deviation	0.417201		
Variance	0.174057	Gamma Distribution Test	
Coefficient of Variation	1.748397	A-D Test Statistic	14.93112
Skewness	5.738026	A-D 5% Critical Value	0.776391
		K-S Test Statistic	0.366881
Gamma Statistics		K-S 5% Critical Value	0.097551
k hat	1.274435	Data do not follow gamma distribution	
k star (bias corrected)	1.238564	at 5% significance level	
Theta hat	0.187235		
Theta star	0.192658	95% UCLs (Assuming Gamma Distribution)	
nu hat	224.3006	Approximate Gamma UCL	0.281456
nu star	217.9873	Adjusted Gamma UCL	0.282228
Approx. Chi Square Value (.05)	184.8101		
Adjusted Level of Significance	0.047273	Lognormal Distribution Test	
Adjusted Chi Square Value	184.3049	Lilliefors Test Statistic	0.362223
		Lilliefors 5% Critical Value	0.094448
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-5.298317		
Maximum of log data	1.163151	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-1.873975	95% H-UCL	0.290566
Standard Deviation of log data	0.922242	95% Chebyshev (MVUE) UCL	0.350254
Variance of log data	0.850529	97.5% Chebyshev (MVUE) UCL	0.400868
		99% Chebyshev (MVUE) UCL	0.500289
		95% Non-parametric UCLs	
		CLT UCL	0.311772
		Adj-CLT UCL (Adjusted for skewness)	0.34084
		Mod-t UCL (Adjusted for skewness)	0.317093
		Jackknife UCL	0.31256
		Standard Bootstrap UCL	0.311234
		Bootstrap-t UCL	0.390177
RECOMMENDATION		Hall's Bootstrap UCL	0.325942
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.31517
		BCA Bootstrap UCL	0.387977
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.432476
		97.5% Chebyshev (Mean, Sd) UCL	0.516358
		99% Chebyshev (Mean, Sd) UCL	0.681128

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Aroclor-1260		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	15	Shapiro-Wilk Test Statistic	0.3389
Number of Unique Samples	13	Shapiro-Wilk 5% Critical Value	0.881
Minimum	0.018	Data not normal at 5% significance level	
Maximum	3.7		
Mean	0.309737	95% UCL (Assuming Normal Distribution)	
Median	0.034	Student's-t UCL	0.737461
Standard Deviation	0.940532		
Variance	0.884601	Gamma Distribution Test	
Coefficient of Variation	3.036555	A-D Test Statistic	2.50027
Skewness	3.836168	A-D 5% Critical Value	0.815066
		K-S Test Statistic	0.286736
Gamma Statistics		K-S 5% Critical Value	0.237034
k hat	0.396163	Data do not follow gamma distribution	
k star (bias corrected)	0.361375	at 5% significance level	
Theta hat	0.781841		
Theta star	0.857106	95% UCLs (Assuming Gamma Distribution)	
nu hat	11.88489	Approximate Gamma UCL	0.750673
nu star	10.84125	Adjusted Gamma UCL	0.843439
Approx. Chi Square Value (.05)	4.473226		
Adjusted Level of Significance	0.03235	Lognormal Distribution Test	
Adjusted Chi Square Value	3.98124	Shapiro-Wilk Test Statistic	0.787792
		Shapiro-Wilk 5% Critical Value	0.881
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.017384		
Maximum of log data	1.308333	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-2.835643	95% H-UCL	0.651485
Standard Deviation of log data	1.447375	95% Chebyshev (MVUE) UCL	0.422313
Variance of log data	2.094894	97.5% Chebyshev (MVUE) UCL	0.541002
		99% Chebyshev (MVUE) UCL	0.774145
		95% Non-parametric UCLs	
		CLT UCL	0.70918
		Adj-CLT UCL (Adjusted for skewness)	0.966196
		Mod-t UCL (Adjusted for skewness)	0.77755
		Jackknife UCL	0.737461
		Standard Bootstrap UCL	0.692581
		Bootstrap-t UCL	5.624482
RECOMMENDATION		Hall's Bootstrap UCL	3.453744
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.77283
		BCA Bootstrap UCL	1.030773
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	1.368271
		97.5% Chebyshev (Mean, Sd) UCL	1.8263
		99% Chebyshev (Mean, Sd) UCL	2.726008

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Aluminum		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	194	Lilliefors Test Statistic	0.122887
Number of Unique Samples	169	Lilliefors 5% Critical Value	0.063611
Minimum	1590	Data not normal at 5% significance level	
Maximum	16400		
Mean	6121.289	95% UCL (Assuming Normal Distribution)	
Median	5385	Student's-t UCL	6492.102
Standard Deviation	3124.922		
Variance	9765140	Gamma Distribution Test	
Coefficient of Variation	0.510501	A-D Test Statistic	2.717026
Skewness	0.713581	A-D 5% Critical Value	0.756528
		K-S Test Statistic	0.097285
Gamma Statistics		K-S 5% Critical Value	0.065485
k hat	3.96422	Data do not follow gamma distribution	
k star (bias corrected)	3.906354	at 5% significance level	
Theta hat	1544.135		
Theta star	1567.008	95% UCLs (Assuming Gamma Distribution)	
nu hat	1538.117	Approximate Gamma UCL	6505.112
nu star	1515.665	Adjusted Gamma UCL	6508.035
Approx.Chi Square Value (.05)	1426.236		
Adjusted Level of Significance	0.048763	Lognormal Distribution Test	
Adjusted Chi Square Value	1425.595	Lilliefors Test Statistic	0.081702
		Lilliefors 5% Critical Value	0.063611
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	7.371489		
Maximum of log data	9.705037	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	8.58813	95% H-UCL	6576.93
Standard Deviation of log data	0.520152	95% Chebyshev (MVUE) UCL	7202.202
Variance of log data	0.270558	97.5% Chebyshev (MVUE) UCL	7661.714
		99% Chebyshev (MVUE) UCL	8564.337
		95% Non-parametric UCLs	
		CLT UCL	6490.322
		Adj-CLT UCL (Adjusted for skewness)	6502.604
		Mod-t UCL (Adjusted for skewness)	6494.018
		Jackknife UCL	6492.102
		Standard Bootstrap UCL	6492.886
		Bootstrap-t UCL	6514.196
RECOMMENDATION		Hall's Bootstrap UCL	6500.658
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	6500.103
		BCA Bootstrap UCL	6642.062
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	7099.235
		97.5% Chebyshev (Mean, Sd) UCL	7522.394
		99% Chebyshev (Mean, Sd) UCL	8353.606

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	Antimony		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	192	Lilliefors Test Statistic	0.231302
Number of Unique Samples	89	Lilliefors 5% Critical Value	0.063942
Minimum	0.216	Data not normal at 5% significance level	
Maximum	35.2		
Mean	4.54087	95% UCL (Assuming Normal Distribution)	
Median	5.4	Student's-t UCL	4.950721
Standard Deviation	3.435881		
Variance	11.80527	Gamma Distribution Test	
Coefficient of Variation	0.756657	A-D Test Statistic	20.75881
Skewness	3.789301	A-D 5% Critical Value	0.771536
		K-S Test Statistic	0.330144
Gamma Statistics		K-S 5% Critical Value	0.066958
k hat	1.487685	Data do not follow gamma distribution	
k star (bias corrected)	1.467912	at 5% significance level	
Theta hat	3.052307		
Theta star	3.093421	95% UCLs (Assuming Gamma Distribution)	
nu hat	571.2709	Approximate Gamma UCL	5.022749
nu star	563.6781	Adjusted Gamma UCL	5.026539
Approx. Chi Square Value (.05)	509.5993		
Adjusted Level of Significance	0.04875	Lognormal Distribution Test	
Adjusted Chi Square Value	509.215	Lilliefors Test Statistic	0.352001
		Lilliefors 5% Critical Value	0.063942
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-1.532477		
Maximum of log data	3.561046	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	1.140812	95% H-UCL	6.279249
Standard Deviation of log data	1.033279	95% Chebyshev (MVUE) UCL	7.42813
Variance of log data	1.067665	97.5% Chebyshev (MVUE) UCL	8.342757
		99% Chebyshev (MVUE) UCL	10.13937
		95% Non-parametric UCLs	
		CLT UCL	4.948733
		Adj-CLT UCL (Adjusted for skewness)	5.021189
		Mod-t UCL (Adjusted for skewness)	4.962023
		Jackknife UCL	4.950721
		Standard Bootstrap UCL	4.955208
		Bootstrap-t UCL	5.026824
RECOMMENDATION		Hall's Bootstrap UCL	5.183277
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	4.967271
		BCA Bootstrap UCL	5.203828
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	5.621717
		97.5% Chebyshev (Mean, Sd) UCL	6.0894
		99% Chebyshev (Mean, Sd) UCL	7.008074

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Arsenic		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	194	Lilliefors Test Statistic	0.494847
Number of Unique Samples	171	Lilliefors 5% Critical Value	0.063611
Minimum	0.515	Data not normal at 5% significance level	
Maximum	3550		
Mean	21.87461	95% UCL (Assuming Normal Distribution)	
Median	2.555	Student's-t UCL	52.09371
Standard Deviation	254.6628		
Variance	64853.14	Gamma Distribution Test	
Coefficient of Variation	11.64193	A-D Test Statistic	1.#INF
Skewness	13.92086	A-D 5% Critical Value	0.865489
		K-S Test Statistic	0.405176
Gamma Statistics		K-S 5% Critical Value	0.07067
k hat	0.314855	Data do not follow gamma distribution	
k star (bias corrected)	0.313422	at 5% significance level	
Theta hat	69.47528		
Theta star	69.79281	95% UCLs (Assuming Gamma Distribution)	
nu hat	122.1636	Approximate Gamma UCL	27.38522
nu star	121.6078	Adjusted Gamma UCL	27.4311
Approx. Chi Square Value (.05)	97.13718		
Adjusted Level of Significance	0.048763	Lognormal Distribution Test	
Adjusted Chi Square Value	96.97471	Lilliefors Test Statistic	0.086804
		Lilliefors 5% Critical Value	0.063611
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-0.663588		
Maximum of log data	8.174703	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	0.912429	95% H-UCL	4.930938
Standard Deviation of log data	1.023314	95% Chebyshev (MVUE) UCL	5.822593
Variance of log data	1.047172	97.5% Chebyshev (MVUE) UCL	6.530406
		99% Chebyshev (MVUE) UCL	7.920768
		95% Non-parametric UCLs	
		CLT UCL	51.94866
		Adj-CLT UCL (Adjusted for skewness)	71.47453
		Mod-t UCL (Adjusted for skewness)	55.13935
		Jackknife UCL	52.09371
		Standard Bootstrap UCL	51.68053
		Bootstrap-t UCL	1644.749
RECOMMENDATION		Hall's Bootstrap UCL	714.1923
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	58.36018
		BCA Bootstrap UCL	94.55099
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	101.5715
		97.5% Chebyshev (Mean, Sd) UCL	136.0564
		99% Chebyshev (Mean, Sd) UCL	203.7954

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Beryllium		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	186	Lilliefors Test Statistic	0.2428
Number of Unique Samples	134	Lilliefors 5% Critical Value	0.064965
Minimum	0.04205	Data not normal at 5% significance level	
Maximum	3.19		
Mean	0.27619	95% UCL (Assuming Normal Distribution)	
Median	0.248	Student's-t UCL	0.305842
Standard Deviation	0.244633		
Variance	0.059845	Gamma Distribution Test	
Coefficient of Variation	0.885743	A-D Test Statistic	4.195015
Skewness	9.350569	A-D 5% Critical Value	0.756977
		K-S Test Statistic	0.119683
Gamma Statistics		K-S 5% Critical Value	0.067572
k hat	3.842115	Data do not follow gamma distribution	
k star (bias corrected)	3.78373	at 5% significance level	
Theta hat	0.071885		
Theta star	0.072994	95% UCLs (Assuming Gamma Distribution)	
nu hat	1429.267	Approximate Gamma UCL	0.294193
nu star	1407.547	Adjusted Gamma UCL	0.294337
Approx. Chi Square Value (.05)	1321.409		
Adjusted Level of Significance	0.04871	Lognormal Distribution Test	
Adjusted Chi Square Value	1320.766	Lilliefors Test Statistic	0.070794
		Lilliefors 5% Critical Value	0.064965
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-3.168896		
Maximum of log data	1.160021	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-1.422413	95% H-UCL	0.286099
Standard Deviation of log data	0.467891	95% Chebyshev (MVUE) UCL	0.311096
Variance of log data	0.218922	97.5% Chebyshev (MVUE) UCL	0.329377
		99% Chebyshev (MVUE) UCL	0.365285
		95% Non-parametric UCLs	
		CLT UCL	0.305694
		Adj-CLT UCL (Adjusted for skewness)	0.318835
		Mod-t UCL (Adjusted for skewness)	0.307892
		Jackknife UCL	0.305842
		Standard Bootstrap UCL	0.30665
		Bootstrap-t UCL	0.332693
RECOMMENDATION		Hall's Bootstrap UCL	0.433325
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.309243
		BCA Bootstrap UCL	0.33584
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	0.354377
or Modified-t UCL		97.5% Chebyshev (Mean, Sd) UCL	0.388208
		99% Chebyshev (Mean, Sd) UCL	0.454664

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Cadmium		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	189	Lilliefors Test Statistic	0.423828
Number of Unique Samples	103	Lilliefors 5% Critical Value	0.064447
Minimum	0.02825	Data not normal at 5% significance level	
Maximum	38.9		
Mean	1.146208	95% UCL (Assuming Normal Distribution)	
Median	0.545	Student's-t UCL	1.611305
Standard Deviation	3.868144		
Variance	14.96254	Gamma Distribution Test	
Coefficient of Variation	3.374732	A-D Test Statistic	28.01157
Skewness	7.835379	A-D 5% Critical Value	0.799503
		K-S Test Statistic	0.378391
Gamma Statistics		K-S 5% Critical Value	0.069314
k hat	0.715161	Data do not follow gamma distribution	
k star (bias corrected)	0.707337	at 5% significance level	
Theta hat	1.602726		
Theta star	1.620455	95% UCLs (Assuming Gamma Distribution)	
nu hat	270.331	Approximate Gamma UCL	1.329569
nu star	267.3734	Adjusted Gamma UCL	1.331073
Approx.Chi Square Value (.05)	230.4998		
Adjusted Level of Significance	0.04873	Lognormal Distribution Test	
Adjusted Chi Square Value	230.2394	Lilliefors Test Statistic	0.256471
		Lilliefors 5% Critical Value	0.064447
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-3.566662		
Maximum of log data	3.660994	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-0.706074	95% H-UCL	0.92267
Standard Deviation of log data	0.974181	95% Chebyshev (MVUE) UCL	1.083654
Variance of log data	0.949029	97.5% Chebyshev (MVUE) UCL	1.210552
		99% Chebyshev (MVUE) UCL	1.459819
		95% Non-parametric UCLs	
		CLT UCL	1.609014
		Adj-CLT UCL (Adjusted for skewness)	1.780363
		Mod-t UCL (Adjusted for skewness)	1.638032
		Jackknife UCL	1.611305
		Standard Bootstrap UCL	1.60395
		Bootstrap-t UCL	2.33613
RECOMMENDATION		Hall's Bootstrap UCL	2.19111
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	1.655227
		BCA Bootstrap UCL	2.064798
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	2.372654
		97.5% Chebyshev (Mean, Sd) UCL	2.903338
		99% Chebyshev (Mean, Sd) UCL	3.945765

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	Chromium		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	197	Lilliefors Test Statistic	0.285452
Number of Unique Samples	181	Lilliefors 5% Critical Value	0.063125
Minimum	2.92	Data not normal at 5% significance level	
Maximum	379		
Mean	26.79939	95% UCL (Assuming Normal Distribution)	
Median	11.4	Student's-t UCL	31.72816
Standard Deviation	41.85877		
Variance	1752.156	Gamma Distribution Test	
Coefficient of Variation	1.56193	A-D Test Statistic	9.502458
Skewness	4.601483	A-D 5% Critical Value	0.785999
		K-S Test Statistic	0.160384
Gamma Statistics		K-S 5% Critical Value	0.066405
k hat	0.957432	Data do not follow gamma distribution	
k star (bias corrected)	0.946236	at 5% significance level	
Theta hat	27.99092		
Theta star	28.32211	95% UCLs (Assuming Gamma Distribution)	
nu hat	377.2281	Approximate Gamma UCL	30.36319
nu star	372.8168	Adjusted Gamma UCL	30.39087
Approx. Chi Square Value (.05)	329.0584		
Adjusted Level of Significance	0.048782	Lognormal Distribution Test	
Adjusted Chi Square Value	328.7588	Lilliefors Test Statistic	0.110317
		Lilliefors 5% Critical Value	0.063125
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	1.071584		
Maximum of log data	5.937536	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	2.682377	95% H-UCL	28.36406
Standard Deviation of log data	1.007848	95% Chebyshev (MVUE) UCL	33.3997
Variance of log data	1.015758	97.5% Chebyshev (MVUE) UCL	37.37996
		99% Chebyshev (MVUE) UCL	45.1984
		95% Non-parametric UCLs	
		CLT UCL	31.70486
		Adj-CLT UCL (Adjusted for skewness)	32.74958
		Mod-t UCL (Adjusted for skewness)	31.89111
		Jackknife UCL	31.72816
		Standard Bootstrap UCL	31.75095
		Bootstrap-t UCL	33.61235
RECOMMENDATION		Hall's Bootstrap UCL	33.81247
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	32.1836
		BCA Bootstrap UCL	34.23107
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	39.79899
		97.5% Chebyshev (Mean, Sd) UCL	45.42393
		99% Chebyshev (Mean, Sd) UCL	56.47304

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls				
Variable:	Chromium, Hexavalent				
Raw Statistics					
Number of Valid Samples	2				
Number of Unique Samples	2				
Minimum	0.611				
Maximum	4.7				
Mean	2.6555				
Median	2.6555				
Too Few Observations To Calculate UCLs					

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	Lead		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	196	Lilliefors Test Statistic	0.469653
Number of Unique Samples	179	Lilliefors 5% Critical Value	0.063286
Minimum	0.27	Data not normal at 5% significance level	
Maximum	19700		
Mean	123.9332	95% UCL (Assuming Normal Distribution)	
Median	7.08	Student's-t UCL	290.071
Standard Deviation	1407.347		
Variance	1980627	Gamma Distribution Test	
Coefficient of Variation	11.3557	A-D Test Statistic	1.#INF
Skewness	13.94423	A-D 5% Critical Value	0.885596
		K-S Test Statistic	0.347649
Gamma Statistics		K-S 5% Critical Value	0.070759
k hat	0.263381	Data do not follow gamma distribution	
k star (bias corrected)	0.262751	at 5% significance level	
Theta hat	470.5472		
Theta star	471.6754	95% UCLs (Assuming Gamma Distribution)	
nu hat	103.2453	Approximate Gamma UCL	158.4197
nu star	102.9984	Adjusted Gamma UCL	158.7071
Approx.Chi Square Value (.05)	80.57657		
Adjusted Level of Significance	0.048776	Lognormal Distribution Test	
Adjusted Chi Square Value	80.43067	Lilliefors Test Statistic	0.097993
		Lilliefors 5% Critical Value	0.063286
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-1.309333		
Maximum of log data	9.888374	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	2.145565	95% H-UCL	25.73995
Standard Deviation of log data	1.320802	95% Chebyshev (MVUE) UCL	31.4633
Variance of log data	1.744519	97.5% Chebyshev (MVUE) UCL	36.30268
		99% Chebyshev (MVUE) UCL	45.8087
		95% Non-parametric UCLs	
		CLT UCL	289.2818
		Adj-CLT UCL (Adjusted for skewness)	396.2661
		Mod-t UCL (Adjusted for skewness)	306.7584
		Jackknife UCL	290.071
		Standard Bootstrap UCL	288.0426
		Bootstrap-t UCL	3365.063
RECOMMENDATION		Hall's Bootstrap UCL	2198.429
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	324.8966
		BCA Bootstrap UCL	527.1718
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	562.1107
		97.5% Chebyshev (Mean, Sd) UCL	751.7104
		99% Chebyshev (Mean, Sd) UCL	1124.142

General Statistics

Data File	P:\W9-GVT\ARMYSAEP\HH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	Manganese		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	196	Lilliefors Test Statistic	0.382288
Number of Unique Samples	162	Lilliefors 5% Critical Value	0.063286
Minimum	40.8	Data not normal at 5% significance level	
Maximum	10000		
Mean	258.2776	95% UCL (Assuming Normal Distribution)	
Median	150.5	Student's-t UCL	344.0044
Standard Deviation	726.1892		
Variance	527350.7	Gamma Distribution Test	
Coefficient of Variation	2.811662	A-D Test Statistic	1.#INF
Skewness	12.55073	A-D 5% Critical Value	0.778522
Gamma Statistics		K-S Test Statistic	0.188355
k hat	1.213202	K-S 5% Critical Value	0.066267
k star (bias corrected)	1.198034	Data do not follow gamma distribution at 5% significance level	
Theta hat	212.8892		
Theta star	215.5846	95% UCLs (Assuming Gamma Distribution)	
nu hat	475.575	Approximate Gamma UCL	288.542
nu star	469.6292	Adjusted Gamma UCL	288.7764
Approx. Chi Square Value (.05)	420.371		
Adjusted Level of Significance	0.048776	Lognormal Distribution Test	
Adjusted Chi Square Value	420.0297	Lilliefors Test Statistic	0.084748
Log-transformed Statistics		Lilliefors 5% Critical Value	0.063286
Minimum of log data	3.708682	Data not lognormal at 5% significance level	
Maximum of log data	9.21034	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	5.088336	95% H-UCL	238.633
Standard Deviation of log data	0.750418	95% Chebyshev (MVUE) UCL	270.8295
Variance of log data	0.563127	97.5% Chebyshev (MVUE) UCL	295.2259
		99% Chebyshev (MVUE) UCL	343.1479
		95% Non-parametric UCLs	
		CLT UCL	343.5972
		Adj-CLT UCL (Adjusted for skewness)	393.2842
		Mod-t UCL (Adjusted for skewness)	351.7546
		Jackknife UCL	344.0044
		Standard Bootstrap UCL	340.7072
		Bootstrap-t UCL	545.529
RECOMMENDATION		Hall's Bootstrap UCL	659.7302
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	358.2041
		BCA Bootstrap UCL	420.6862
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	484.3765
		97.5% Chebyshev (Mean, Sd) UCL	582.2097
		99% Chebyshev (Mean, Sd) UCL	774.3841

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Mercury		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	150	Lilliefors Test Statistic	0.382768
Number of Unique Samples	81	Lilliefors 5% Critical Value	0.072342
Minimum	0.01	Data not normal at 5% significance level	
Maximum	4.9		
Mean	0.145219	95% UCL (Assuming Normal Distribution)	
Median	0.0564	Student's-t UCL	0.206496
Standard Deviation	0.453424		
Variance	0.205594	Gamma Distribution Test	
Coefficient of Variation	3.122342	A-D Test Statistic	26.97206
Skewness	8.737036	A-D 5% Critical Value	0.791827
		K-S Test Statistic	0.356306
Gamma Statistics		K-S 5% Critical Value	0.079338
k hat	0.827893	Data do not follow gamma distribution	
k star (bias corrected)	0.81578	at 5% significance level	
Theta hat	0.175408		
Theta star	0.178013	95% UCLs (Assuming Gamma Distribution)	
nu hat	248.3679	Approximate Gamma UCL	0.169636
nu star	244.7339	Adjusted Gamma UCL	0.16989
Approx. Chi Square Value (.05)	209.5081		
Adjusted Level of Significance	0.0484	Lognormal Distribution Test	
Adjusted Chi Square Value	209.1948	Lilliefors Test Statistic	0.296191
		Lilliefors 5% Critical Value	0.072342
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.60517		
Maximum of log data	1.589235	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-2.643178	95% H-UCL	0.117607
Standard Deviation of log data	0.849234	95% Chebyshev (MVUE) UCL	0.137181
Variance of log data	0.721198	97.5% Chebyshev (MVUE) UCL	0.152538
		99% Chebyshev (MVUE) UCL	0.182703
		95% Non-parametric UCLs	
		CLT UCL	0.206115
		Adj-CLT UCL (Adjusted for skewness)	0.234335
		Mod-t UCL (Adjusted for skewness)	0.210898
		Jackknife UCL	0.206496
		Standard Bootstrap UCL	0.205175
		Bootstrap-t UCL	0.335162
RECOMMENDATION		Hall's Bootstrap UCL	0.453209
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.213506
		BCA Bootstrap UCL	0.259445
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.306594
		97.5% Chebyshev (Mean, Sd) UCL	0.376421
		99% Chebyshev (Mean, Sd) UCL	0.513583

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Nickel		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	196	Lilliefors Test Statistic	0.485535
Number of Unique Samples	171	Lilliefors 5% Critical Value	0.063286
Minimum	2.43	Data not normal at 5% significance level	
Maximum	8052		
Mean	56.1699	95% UCL (Assuming Normal Distribution)	
Median	7.825	Student's-t UCL	124.0826
Standard Deviation	575.2859		
Variance	330953.9	Gamma Distribution Test	
Coefficient of Variation	10.24189	A-D Test Statistic	1.#INF
Skewness	13.91299	A-D 5% Critical Value	0.850216
		K-S Test Statistic	0.368755
Gamma Statistics		K-S 5% Critical Value	0.06953
k hat	0.378247	Data do not follow gamma distribution	
k star (bias corrected)	0.375859	at 5% significance level	
Theta hat	148.5007		
Theta star	149.4442	95% UCLs (Assuming Gamma Distribution)	
nu hat	148.2727	Approximate Gamma UCL	68.80658
nu star	147.3366	Adjusted Gamma UCL	68.90949
Approx. Chi Square Value (.05)	120.2774		
Adjusted Level of Significance	0.048776	Lognormal Distribution Test	
Adjusted Chi Square Value	120.0978	Lilliefors Test Statistic	0.099584
		Lilliefors 5% Critical Value	0.063286
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	0.887891		
Maximum of log data	8.993676	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	2.272886	95% H-UCL	17.45326
Standard Deviation of log data	0.943298	95% Chebyshev (MVUE) UCL	20.37599
Variance of log data	0.889811	97.5% Chebyshev (MVUE) UCL	22.65998
		99% Chebyshev (MVUE) UCL	27.14642
		95% Non-parametric UCLs	
		CLT UCL	123.76
		Adj-CLT UCL (Adjusted for skewness)	167.3943
		Mod-t UCL (Adjusted for skewness)	130.8887
		Jackknife UCL	124.0826
		Standard Bootstrap UCL	121.376
		Bootstrap-t UCL	2117.552
RECOMMENDATION		Hall's Bootstrap UCL	856.6036
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	137.3155
		BCA Bootstrap UCL	185.38
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	235.2851
		97.5% Chebyshev (Mean, Sd) UCL	312.7884
		99% Chebyshev (Mean, Sd) UCL	465.0287

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Thallium		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	186	Lilliefors Test Statistic	0.400171
Number of Unique Samples	53	Lilliefors 5% Critical Value	0.064965
Minimum	0.408	Data not normal at 5% significance level	
Maximum	2.5		
Mean	0.716737	95% UCL (Assuming Normal Distribution)	
Median	0.57	Student's-t UCL	0.767355
Standard Deviation	0.417595		
Variance	0.174386	Gamma Distribution Test	
Coefficient of Variation	0.582634	A-D Test Statistic	36.99104
Skewness	2.656777	A-D 5% Critical Value	0.755522
		K-S Test Statistic	0.376222
Gamma Statistics		K-S 5% Critical Value	0.067387
k hat	5.318992	Data do not follow gamma distribution	
k star (bias corrected)	5.236786	at 5% significance level	
Theta hat	0.13475		
Theta star	0.136866	95% UCLs (Assuming Gamma Distribution)	
nu hat	1978.665	Approximate Gamma UCL	0.75615
nu star	1948.084	Adjusted Gamma UCL	0.756462
Approx. Chi Square Value (.05)	1846.542		
Adjusted Level of Significance	0.04871	Lognormal Distribution Test	
Adjusted Chi Square Value	1845.78	Lilliefors Test Statistic	0.353925
		Lilliefors 5% Critical Value	0.064965
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-0.896488		
Maximum of log data	0.916291	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-0.429985	95% H-UCL	0.735509
Standard Deviation of log data	0.383331	95% Chebyshev (MVUE) UCL	0.788508
Variance of log data	0.146943	97.5% Chebyshev (MVUE) UCL	0.826886
		99% Chebyshev (MVUE) UCL	0.90227
		95% Non-parametric UCLs	
		CLT UCL	0.767101
		Adj-CLT UCL (Adjusted for skewness)	0.773475
		Mod-t UCL (Adjusted for skewness)	0.768349
		Jackknife UCL	0.767355
		Standard Bootstrap UCL	0.768156
		Bootstrap-t UCL	0.773909
RECOMMENDATION		Hall's Bootstrap UCL	0.773006
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.770317
		BCA Bootstrap UCL	0.789828
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	0.850204
or Modified-t UCL		97.5% Chebyshev (Mean, Sd) UCL	0.907956
		99% Chebyshev (Mean, Sd) UCL	1.021397

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\SO-MainSt-InputFile.xls		
Variable:	Vanadium		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	196	Lilliefors Test Statistic	0.242324
Number of Unique Samples	167	Lilliefors 5% Critical Value	0.063286
Minimum	4.13	Data not normal at 5% significance level	
Maximum	205		
Mean	17.11031	95% UCL (Assuming Normal Distribution)	
Median	11.7	Student's-t UCL	19.1424
Standard Deviation	17.21376		
Variance	296.3135	Gamma Distribution Test	
Coefficient of Variation	1.006046	A-D Test Statistic	4.927586
Skewness	6.988956	A-D 5% Critical Value	0.76464
		K-S Test Statistic	0.131712
Gamma Statistics		K-S 5% Critical Value	0.065406
k hat	2.283163	Data do not follow gamma distribution	
k star (bias corrected)	2.251618	at 5% significance level	
Theta hat	7.494125		
Theta star	7.599117	95% UCLs (Assuming Gamma Distribution)	
nu hat	894.9997	Approximate Gamma UCL	18.53781
nu star	882.6341	Adjusted Gamma UCL	18.54869
Approx. Chi Square Value (.05)	814.6667		
Adjusted Level of Significance	0.048776	Lognormal Distribution Test	
Adjusted Chi Square Value	814.1891	Lilliefors Test Statistic	0.096515
		Lilliefors 5% Critical Value	0.063286
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	1.418277		
Maximum of log data	5.32301	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	2.604983	95% H-UCL	18.0199
Standard Deviation of log data	0.634287	95% Chebyshev (MVUE) UCL	20.08736
Variance of log data	0.40232	97.5% Chebyshev (MVUE) UCL	21.62851
		99% Chebyshev (MVUE) UCL	24.6558
		95% Non-parametric UCLs	
		CLT UCL	19.13274
		Adj-CLT UCL (Adjusted for skewness)	19.7886
		Mod-t UCL (Adjusted for skewness)	19.2447
		Jackknife UCL	19.1424
		Standard Bootstrap UCL	19.11855
		Bootstrap-t UCL	20.30136
RECOMMENDATION		Hall's Bootstrap UCL	28.64742
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	19.32862
		BCA Bootstrap UCL	20.73362
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	22.46981
		97.5% Chebyshev (Mean, Sd) UCL	24.78887
		99% Chebyshev (Mean, Sd) UCL	29.34422

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-MainSt-InputFile.xls		
Variable:	Zinc		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	196	Lilliefors Test Statistic	0.461877
Number of Unique Samples	168	Lilliefors 5% Critical Value	0.063286
Minimum	7.88	Data not normal at 5% significance level	
Maximum	19100		
Mean	144.3341	95% UCL (Assuming Normal Distribution)	
Median	27.05	Student's-t UCL	305.2594
Standard Deviation	1363.192		
Variance	1858293	Gamma Distribution Test	
Coefficient of Variation	9.444701	A-D Test Statistic	1.#INF
Skewness	13.93077	A-D 5% Critical Value	0.838906
		K-S Test Statistic	0.320994
Gamma Statistics		K-S 5% Critical Value	0.069099
k hat	0.425089	Data do not follow gamma distribution	
k star (bias corrected)	0.421984	at 5% significance level	
Theta hat	339.5384		
Theta star	342.0368	95% UCLs (Assuming Gamma Distribution)	
nu hat	166.6349	Approximate Gamma UCL	174.6896
nu star	165.4177	Adjusted Gamma UCL	174.9352
Approx. Chi Square Value (.05)	136.6734		
Adjusted Level of Significance	0.048776	Lognormal Distribution Test	
Adjusted Chi Square Value	136.4815	Lilliefors Test Statistic	0.080209
		Lilliefors 5% Critical Value	0.063286
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	2.064328		
Maximum of log data	9.857444	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	3.439173	95% H-UCL	56.49901
Standard Deviation of log data	0.950595	95% Chebyshev (MVUE) UCL	66.02748
Variance of log data	0.903631	97.5% Chebyshev (MVUE) UCL	73.48322
		99% Chebyshev (MVUE) UCL	88.12857
		95% Non-parametric UCLs	
		CLT UCL	304.4949
		Adj-CLT UCL (Adjusted for skewness)	408.0226
		Mod-t UCL (Adjusted for skewness)	321.4076
		Jackknife UCL	305.2594
		Standard Bootstrap UCL	300.2736
		Bootstrap-t UCL	3137.021
RECOMMENDATION		Hall's Bootstrap UCL	1446.823
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	340.342
		BCA Bootstrap UCL	531.6421
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	568.7639
		97.5% Chebyshev (Mean, Sd) UCL	752.415
		99% Chebyshev (Mean, Sd) UCL	1113.162

**CHROMIUM PLATING AREA SUBSURFACE SOIL**

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-CrPlating-InputFile.xls				
Variable:	Tetrachloroethene				
Raw Statistics					
Number of Valid Samples	1				
Number of Unique Samples	1				
Minimum	0.0004				
Maximum	0.0004				
Mean	0.0004				
Median	0.0004				
Too Few Observations To Calculate UCLs					

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-CrPlating-InputFile.xls				
Variable:	Arsenic				
Raw Statistics					
Number of Valid Samples	2				
Number of Unique Samples	2				
Minimum	0.535				
Maximum	1.13				
Mean	0.8325				
Median	0.8325				
Too Few Observations To Calculate UCLs					

General Statistics

Data File	P:\W9-GVT\ARMY\SAEPIHH 2004 REV\ProUCL\SO-CrPlating-InputFile.xls		
Variable:	Chromium		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	52	Lilliefors Test Statistic	0.364075
Number of Unique Samples	50	Lilliefors 5% Critical Value	0.122866
Minimum	4.39	Data not normal at 5% significance level	
Maximum	2218		
Mean	178.5556	95% UCL (Assuming Normal Distribution)	
Median	28.3	Student's-t UCL	280.75
Standard Deviation	439.8863		
Variance	193500	Gamma Distribution Test	
Coefficient of Variation	2.463582	A-D Test Statistic	4.056114
Skewness	3.632023	A-D 5% Critical Value	0.835201
		K-S Test Statistic	0.205209
Gamma Statistics		K-S 5% Critical Value	0.131714
k hat	0.414142	Data do not follow gamma distribution	
k star (bias corrected)	0.403069	at 5% significance level	
Theta hat	431.146		
Theta star	442.9896	95% UCLs (Assuming Gamma Distribution)	
nu hat	43.07074	Approximate Gamma UCL	266.6001
nu star	41.91923	Adjusted Gamma UCL	269.7096
Approx. Chi Square Value (.05)	28.07542		
Adjusted Level of Significance	0.045385	Lognormal Distribution Test	
Adjusted Chi Square Value	27.75174	Lilliefors Test Statistic	0.125039
		Lilliefors 5% Critical Value	0.122866
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	1.479329		
Maximum of log data	7.704361	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	3.604832	95% H-UCL	294.3566
Standard Deviation of log data	1.65452	95% Chebyshev (MVUE) UCL	324.1502
Variance of log data	2.737437	97.5% Chebyshev (MVUE) UCL	405.4092
		99% Chebyshev (MVUE) UCL	565.0269
		95% Non-parametric UCLs	
		CLT UCL	278.8937
		Adj-CLT UCL (Adjusted for skewness)	311.7234
		Mod-t UCL (Adjusted for skewness)	285.8708
		Jackknife UCL	280.75
		Standard Bootstrap UCL	278.75
		Bootstrap-t UCL	412.2942
RECOMMENDATION		Hall's Bootstrap UCL	307.0946
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	291.1865
		BCA Bootstrap UCL	354.7171
Use 97.5% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	444.4539
		97.5% Chebyshev (Mean, Sd) UCL	559.5083
		99% Chebyshev (Mean, Sd) UCL	785.5104

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-CrPlating-InputFile.xls		
Variable:	Chromium, Hexavalent		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	33	Shapiro-Wilk Test Statistic	0.445772
Number of Unique Samples	33	Shapiro-Wilk 5% Critical Value	0.931
Minimum	0.2235	Data not normal at 5% significance level	
Maximum	513		
Mean	42.22217	95% UCL (Assuming Normal Distribution)	
Median	6.25	Student's-t UCL	71.89108
Standard Deviation	100.6176		
Variance	10123.89	Gamma Distribution Test	
Coefficient of Variation	2.383051	A-D Test Statistic	1.030076
Skewness	3.95613	A-D 5% Critical Value	0.844649
		K-S Test Statistic	0.125076
Gamma Statistics		K-S 5% Critical Value	0.165203
k hat	0.348399	Data follow approximate gamma distribution	
k star (bias corrected)	0.336928	at 5% significance level	
Theta hat	121.1892		
Theta star	125.315	95% UCLs (Assuming Gamma Distribution)	
nu hat	22.99432	Approximate Gamma UCL	75.02425
nu star	22.23726	Adjusted Gamma UCL	77.34899
Approx. Chi Square Value (.05)	12.51469		
Adjusted Level of Significance	0.0419	Lognormal Distribution Test	
Adjusted Chi Square Value	12.13856	Shapiro-Wilk Test Statistic	0.928773
		Shapiro-Wilk 5% Critical Value	0.931
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-1.498344		
Maximum of log data	6.240276	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	1.811425	95% H-UCL	448.0048
Standard Deviation of log data	2.27929	95% Chebyshev (MVUE) UCL	221.5072
Variance of log data	5.195165	97.5% Chebyshev (MVUE) UCL	289.3038
		99% Chebyshev (MVUE) UCL	422.4772
		95% Non-parametric UCLs	
		CLT UCL	71.03222
		Adj-CLT UCL (Adjusted for skewness)	83.92097
		Mod-t UCL (Adjusted for skewness)	73.90146
		Jackknife UCL	71.89108
		Standard Bootstrap UCL	69.78327
		Bootstrap-t UCL	146.6854
RECOMMENDATION		Hall's Bootstrap UCL	208.1884
Assuming gamma distribution (0.05)		Percentile Bootstrap UCL	73.53547
		BCA Bootstrap UCL	97.86726
Use Adjusted Gamma UCL		95% Chebyshev (Mean, Sd) UCL	118.5695
		97.5% Chebyshev (Mean, Sd) UCL	151.605
		99% Chebyshev (Mean, Sd) UCL	216.4969

*used 88% Cr as ind. cut in footnote*

**SOUTH LOT AREA SUBSURFACE SOIL**

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\SO-SoPkgLot-InputFile.xls		
Variable:	1,1,1-Trichloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	30	Shapiro-Wilk Test Statistic	0.284379
Number of Unique Samples	9	Shapiro-Wilk 5% Critical Value	0.927
Minimum	0.001	Data not normal at 5% significance level	
Maximum	2.6		
Mean	0.1643	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.355469
Standard Deviation	0.616243		
Variance	0.379756	Gamma Distribution Test	
Coefficient of Variation	3.750719	A-D Test Statistic	10.12089
Skewness	3.695074	A-D 5% Critical Value	0.897193
		K-S Test Statistic	0.526351
Gamma Statistics		K-S 5% Critical Value	0.177154
k hat	0.200998	Data do not follow gamma distribution	
k star (bias corrected)	0.20312	at 5% significance level	
Theta hat	0.817421		
Theta star	0.80888	95% UCLs (Assuming Gamma Distribution)	
nu hat	12.05988	Approximate Gamma UCL	0.374302
nu star	12.18723	Adjusted Gamma UCL	0.393437
Approx. Chi Square Value (.05)	5.349583		
Adjusted Level of Significance	0.041	Lognormal Distribution Test	
Adjusted Chi Square Value	5.089403	Shapiro-Wilk Test Statistic	0.414392
		Shapiro-Wilk 5% Critical Value	0.927
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.907755		
Maximum of log data	0.955511	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.46455	95% H-UCL	0.060574
Standard Deviation of log data	1.751156	95% Chebyshev (MVUE) UCL	0.049391
Variance of log data	3.066549	97.5% Chebyshev (MVUE) UCL	0.063193
		99% Chebyshev (MVUE) UCL	0.090305
		95% Non-parametric UCLs	
		CLT UCL	0.349363
		Adj-CLT UCL (Adjusted for skewness)	0.430465
		Mod-t UCL (Adjusted for skewness)	0.368119
		Jackknife UCL	0.355469
		Standard Bootstrap UCL	0.345543
		Bootstrap-t UCL	110.1467
RECOMMENDATION		Hall's Bootstrap UCL	74.25157
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.337817
		BCA Bootstrap UCL	0.49885
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.65472
		97.5% Chebyshev (Mean, Sd) UCL	0.866925
		99% Chebyshev (Mean, Sd) UCL	1.283761

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\SO-SoPkgLot-InputFile.xls		
Variable:	1,1,2,2-Tetrachloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	29	Shapiro-Wilk Test Statistic	0.193912
Number of Unique Samples	6	Shapiro-Wilk 5% Critical Value	0.926
Minimum	0.002	Data not normal at 5% significance level	
Maximum	0.59		
Mean	0.023017	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.057464
Standard Deviation	0.109047		
Variance	0.011891	Gamma Distribution Test	
Coefficient of Variation	4.737642	A-D Test Statistic	10.49102
Skewness	5.384976	A-D 5% Critical Value	0.845949
		K-S Test Statistic	0.547785
Gamma Statistics		K-S 5% Critical Value	0.175643
k hat	0.345821	Data do not follow gamma distribution	
k star (bias corrected)	0.333034	at 5% significance level	
Theta hat	0.066558		
Theta star	0.069114	95% UCLs (Assuming Gamma Distribution)	
nu hat	20.05759	Approximate Gamma UCL	0.042969
nu star	19.316	Adjusted Gamma UCL	0.044662
Approx.Chi Square Value (.05)	10.34704		
Adjusted Level of Significance	0.0407	Lognormal Distribution Test	
Adjusted Chi Square Value	9.954858	Shapiro-Wilk Test Statistic	0.322425
		Shapiro-Wilk 5% Critical Value	0.926
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.214608		
Maximum of log data	-0.527633	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.719789	95% H-UCL	0.008795
Standard Deviation of log data	1.013486	95% Chebyshev (MVUE) UCL	0.010384
Variance of log data	1.027153	97.5% Chebyshev (MVUE) UCL	0.012565
		99% Chebyshev (MVUE) UCL	0.01685
		95% Non-parametric UCLs	
		CLT UCL	0.056325
		Adj-CLT UCL (Adjusted for skewness)	0.077961
		Mod-t UCL (Adjusted for skewness)	0.060839
		Jackknife UCL	0.057464
		Standard Bootstrap UCL	0.055515
		Bootstrap-t UCL	5.309381
RECOMMENDATION		Hall's Bootstrap UCL	2.056971
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.0635
		BCA Bootstrap UCL	0.083914
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.111283
		97.5% Chebyshev (Mean, Sd) UCL	0.149476
		99% Chebyshev (Mean, Sd) UCL	0.224498

General Statistics

Data File	P:\W9-GVT\ARMY\SAEPIHH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	1,1-Dichloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	30	Shapiro-Wilk Test Statistic	0.242685
Number of Unique Samples	8	Shapiro-Wilk 5% Critical Value	0.927
Minimum	0.001	Data not normal at 5% significance level	
Maximum	9.8		
Mean	0.4042	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.969211
Standard Deviation	1.821343		
Variance	3.317289	Gamma Distribution Test	
Coefficient of Variation	4.506043	A-D Test Statistic	10.31436
Skewness	5.099517	A-D 5% Critical Value	0.914366
		K-S Test Statistic	0.563344
Gamma Statistics		K-S 5% Critical Value	0.178421
k hat	0.166898	Data do not follow gamma distribution	
k star (bias corrected)	0.172431	at 5% significance level	
Theta hat	2.421836		
Theta star	2.344132	95% UCLs (Assuming Gamma Distribution)	
nu hat	10.01389	Approximate Gamma UCL	1.005676
nu star	10.34583	Adjusted Gamma UCL	1.063092
Approx. Chi Square Value (.05)	4.158184		
Adjusted Level of Significance	0.041	Lognormal Distribution Test	
Adjusted Chi Square Value	3.933606	Shapiro-Wilk Test Statistic	0.392673
		Shapiro-Wilk 5% Critical Value	0.927
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.907755		
Maximum of log data	2.282382	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.438975	95% H-UCL	0.105067
Standard Deviation of log data	1.924959	95% Chebyshev (MVUE) UCL	0.072382
Variance of log data	3.705469	97.5% Chebyshev (MVUE) UCL	0.093411
		99% Chebyshev (MVUE) UCL	0.13472
		95% Non-parametric UCLs	
		CLT UCL	0.951163
		Adj-CLT UCL (Adjusted for skewness)	1.281974
		Mod-t UCL (Adjusted for skewness)	1.020811
		Jackknife UCL	0.969211
		Standard Bootstrap UCL	0.953852
		Bootstrap-t UCL	1315.728
RECOMMENDATION		Hall's Bootstrap UCL	330.4172
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.98265
		BCA Bootstrap UCL	1.6357
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	1.853665
		97.5% Chebyshev (Mean, Sd) UCL	2.48085
		99% Chebyshev (Mean, Sd) UCL	3.712833

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\SO-SoPkgLot-InputFile.xls		
Variable:	1,1-Dichloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	30	Shapiro-Wilk Test Statistic	0.286509
Number of Unique Samples	7	Shapiro-Wilk 5% Critical Value	0.927
Minimum	0.002	Data not normal at 5% significance level	
Maximum	3		
Mean	0.177583	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.386214
Standard Deviation	0.672531		
Variance	0.452298	Gamma Distribution Test	
Coefficient of Variation	3.78713	A-D Test Statistic	10.48161
Skewness	3.793724	A-D 5% Critical Value	0.898571
		K-S Test Statistic	0.561094
Gamma Statistics		K-S 5% Critical Value	0.177259
k hat	0.198139	Data do not follow gamma distribution	
k star (bias corrected)	0.200547	at 5% significance level	
Theta hat	0.896256		
Theta star	0.885493	95% UCLs (Assuming Gamma Distribution)	
nu hat	11.88834	Approximate Gamma UCL	0.407197
nu star	12.03284	Adjusted Gamma UCL	0.428191
Approx. Chi Square Value (.05)	5.24766		
Adjusted Level of Significance	0.041	Lognormal Distribution Test	
Adjusted Chi Square Value	4.990366	Shapiro-Wilk Test Statistic	0.358763
		Shapiro-Wilk 5% Critical Value	0.927
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.214608		
Maximum of log data	1.098612	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.447891	95% H-UCL	0.061234
Standard Deviation of log data	1.749136	95% Chebyshev (MVUE) UCL	0.050018
Variance of log data	3.059477	97.5% Chebyshev (MVUE) UCL	0.063988
		99% Chebyshev (MVUE) UCL	0.09143
		95% Non-parametric UCLs	
		CLT UCL	0.37955
		Adj-CLT UCL (Adjusted for skewness)	0.470423
		Mod-t UCL (Adjusted for skewness)	0.400388
		Jackknife UCL	0.386214
		Standard Bootstrap UCL	0.378591
		Bootstrap-t UCL	233.822
RECOMMENDATION		Hall's Bootstrap UCL	111.8083
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.402367
		BCA Bootstrap UCL	0.527217
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.712799
		97.5% Chebyshev (Mean, Sd) UCL	0.944387
		99% Chebyshev (Mean, Sd) UCL	1.399297

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	1,2-Dichloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	29	Shapiro-Wilk Test Statistic	0.199843
Number of Unique Samples	6	Shapiro-Wilk 5% Critical Value	0.926
Minimum	0.002	Data not normal at 5% significance level	
Maximum	0.21		
Mean	0.009914	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.022071
Standard Deviation	0.038485		
Variance	0.001481	Gamma Distribution Test	
Coefficient of Variation	3.882006	A-D Test Statistic	9.694539
Skewness	5.383653	A-D 5% Critical Value	0.806095
		K-S Test Statistic	0.509663
Gamma Statistics		K-S 5% Critical Value	0.171514
k hat	0.548552	Data do not follow gamma distribution	
k star (bias corrected)	0.514794	at 5% significance level	
Theta hat	0.018073		
Theta star	0.019258	95% UCLs (Assuming Gamma Distribution)	
nu hat	31.81601	Approximate Gamma UCL	0.016105
nu star	29.85803	Adjusted Gamma UCL	0.016592
Approx. Chi Square Value (.05)	18.37924		
Adjusted Level of Significance	0.0407	Lognormal Distribution Test	
Adjusted Chi Square Value	17.84063	Shapiro-Wilk Test Statistic	0.355124
		Shapiro-Wilk 5% Critical Value	0.926
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.214608		
Maximum of log data	-1.560648	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.755411	95% H-UCL	0.00632
Standard Deviation of log data	0.825129	95% Chebyshev (MVUE) UCL	0.007622
Variance of log data	0.680838	97.5% Chebyshev (MVUE) UCL	0.009024
		99% Chebyshev (MVUE) UCL	0.011778
		95% Non-parametric UCLs	
		CLT UCL	0.021669
		Adj-CLT UCL (Adjusted for skewness)	0.029303
		Mod-t UCL (Adjusted for skewness)	0.023262
		Jackknife UCL	0.022071
		Standard Bootstrap UCL	0.021427
		Bootstrap-t UCL	0.67588
RECOMMENDATION		Hall's Bootstrap UCL	0.256033
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.024172
		BCA Bootstrap UCL	0.031483
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.041065
		97.5% Chebyshev (Mean, Sd) UCL	0.054544
		99% Chebyshev (Mean, Sd) UCL	0.081021

General Statistics

Data File	P:\W9-GVTARMYSAEPIHH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Chloroethane		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	30	Shapiro-Wilk Test Statistic	0.237661
Number of Unique Samples	11	Shapiro-Wilk 5% Critical Value	0.927
Minimum	0.004	Data not normal at 5% significance level	
Maximum	11		
Mean	0.446767	95% UCL (Assuming Normal Distribution)	
Median	0.005	Student's-t UCL	1.078005
Standard Deviation	2.034829		
Variance	4.140529	Gamma Distribution Test	
Coefficient of Variation	4.554568	A-D Test Statistic	10.35794
Skewness	5.169084	A-D 5% Critical Value	0.903964
		K-S Test Statistic	0.556338
Gamma Statistics		K-S 5% Critical Value	0.177656
k hat	0.187473	Data do not follow gamma distribution	
k star (bias corrected)	0.190948	at 5% significance level	
Theta hat	2.3831		
Theta star	2.339732	95% UCLs (Assuming Gamma Distribution)	
nu hat	11.24837	Approximate Gamma UCL	1.050921
nu star	11.45687	Adjusted Gamma UCL	1.106914
Approx. Chi Square Value (.05)	4.870534		
Adjusted Level of Significance	0.041	Lognormal Distribution Test	
Adjusted Chi Square Value	4.624159	Shapiro-Wilk Test Statistic	0.371432
		Shapiro-Wilk 5% Critical Value	0.927
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-5.521461		
Maximum of log data	2.397895	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.770736	95% H-UCL	0.122298
Standard Deviation of log data	1.754206	95% Chebyshev (MVUE) UCL	0.099455
Variance of log data	3.077238	97.5% Chebyshev (MVUE) UCL	0.127268
		99% Chebyshev (MVUE) UCL	0.181901
		95% Non-parametric UCLs	
		CLT UCL	1.057842
		Adj-CLT UCL (Adjusted for skewness)	1.43247
		Mod-t UCL (Adjusted for skewness)	1.136439
		Jackknife UCL	1.078005
		Standard Bootstrap UCL	1.050051
		Bootstrap-t UCL	911.8788
RECOMMENDATION		Hall's Bootstrap UCL	331.966
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	1.179433
		BCA Bootstrap UCL	1.62135
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	2.066129
		97.5% Chebyshev (Mean, Sd) UCL	2.766829
		99% Chebyshev (Mean, Sd) UCL	4.143217

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Cis-1,2-Dichloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	4	Shapiro-Wilk Test Statistic	0.630958
Number of Unique Samples	3	Shapiro-Wilk 5% Critical Value	0.748
Minimum	0.001	Data not normal at 5% significance level	
Maximum	0.84		
Mean	0.211125	95% UCL (Assuming Normal Distribution)	
Median	0.00175	Student's-t UCL	0.704449
Standard Deviation	0.419251		
Variance	0.175771	Gamma Distribution Test	
Coefficient of Variation	1.985793	A-D Test Statistic	0.789997
Skewness	1.999983	A-D 5% Critical Value	0.729117
		K-S Test Statistic	0.443007
Gamma Statistics		K-S 5% Critical Value	0.423633
k hat	0.211985	Data do not follow gamma distribution	
k star (bias corrected)	0.219663	at 5% significance level	
Theta hat	0.995942		
Theta star	0.961131	95% UCLs (Assuming Gamma Distribution)	
nu hat	1.695882	Approximate Gamma UCL	2.94703
nu star	1.757304	Adjusted Gamma UCL	N/A
Approx. Chi Square Value (.05)	0.125893		
Adjusted Level of Significance	N/A	Lognormal Distribution Test	
Adjusted Chi Square Value	N/A	Shapiro-Wilk Test Statistic	0.724482
		Shapiro-Wilk 5% Critical Value	0.748
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.907755		
Maximum of log data	-0.174353	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-4.995332	95% H-UCL	3.1E+023
Standard Deviation of log data	3.242881	95% Chebyshev (MVUE) UCL	0.455046
Variance of log data	10.51628	97.5% Chebyshev (MVUE) UCL	0.612931
		99% Chebyshev (MVUE) UCL	0.923066
		95% Non-parametric UCLs	
		CLT UCL	0.555928
		Adj-CLT UCL (Adjusted for skewness)	0.779914
		Mod-t UCL (Adjusted for skewness)	0.739387
		Jackknife UCL	0.704449
		Standard Bootstrap UCL	N/R
		Bootstrap-t UCL	N/R
RECOMMENDATION		Hall's Bootstrap UCL	N/R
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	N/R
		BCA Bootstrap UCL	N/R
Can't recommend Hall's Bootstrap UCL *		95% Chebyshev (Mean, Sd) UCL	1.12486
		97.5% Chebyshev (Mean, Sd) UCL	1.520235
		99% Chebyshev (Mean, Sd) UCL	2.29687

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Tetrachloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	29	Shapiro-Wilk Test Statistic	0.20676
Number of Unique Samples	12	Shapiro-Wilk 5% Critical Value	0.926
Minimum	0.0005	Data not normal at 5% significance level	
Maximum	0.39		
Mean	0.016241	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.038956
Standard Deviation	0.071906		
Variance	0.00517	Gamma Distribution Test	
Coefficient of Variation	4.42731	A-D Test Statistic	7.503811
Skewness	5.379984	A-D 5% Critical Value	0.83701
		K-S Test Statistic	0.454143
Gamma Statistics		K-S 5% Critical Value	0.174729
k hat	0.385817	Data do not follow gamma distribution	
k star (bias corrected)	0.368894	at 5% significance level	
Theta hat	0.042096		
Theta star	0.044027	95% UCLs (Assuming Gamma Distribution)	
nu hat	22.3774	Approximate Gamma UCL	0.029239
nu star	21.39583	Adjusted Gamma UCL	0.03032
Approx. Chi Square Value (.05)	11.88487		
Adjusted Level of Significance	0.0407	Lognormal Distribution Test	
Adjusted Chi Square Value	11.46119	Shapiro-Wilk Test Statistic	0.675187
		Shapiro-Wilk 5% Critical Value	0.926
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.600902		
Maximum of log data	-0.941609	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.83573	95% H-UCL	0.009452
Standard Deviation of log data	1.118131	95% Chebyshev (MVUE) UCL	0.010891
Variance of log data	1.250217	97.5% Chebyshev (MVUE) UCL	0.013318
		99% Chebyshev (MVUE) UCL	0.018087
		95% Non-parametric UCLs	
		CLT UCL	0.038204
		Adj-CLT UCL (Adjusted for skewness)	0.052458
		Mod-t UCL (Adjusted for skewness)	0.041179
		Jackknife UCL	0.038956
		Standard Bootstrap UCL	0.038332
		Bootstrap-t UCL	0.943919
RECOMMENDATION		Hall's Bootstrap UCL	0.386792
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.042934
		BCA Bootstrap UCL	0.05671
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.074444
		97.5% Chebyshev (Mean, Sd) UCL	0.099628
		99% Chebyshev (Mean, Sd) UCL	0.149097

General Statistics

Data File	P:\W9-GVT\ARMYSAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	trans-1,2-Dichloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	29	Shapiro-Wilk Test Statistic	0.19259
Number of Unique Samples	6	Shapiro-Wilk 5% Critical Value	0.926
Minimum	0.002	Data not normal at 5% significance level	
Maximum	1		
Mean	0.037155	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.095653
Standard Deviation	0.185182		
Variance	0.034292	Gamma Distribution Test	
Coefficient of Variation	4.984018	A-D Test Statistic	10.74512
Skewness	5.385099	A-D 5% Critical Value	0.861098
		K-S Test Statistic	0.559582
Gamma Statistics		K-S 5% Critical Value	0.177102
k hat	0.288141	Data do not follow gamma distribution	
k star (bias corrected)	0.281322	at 5% significance level	
Theta hat	0.128948		
Theta star	0.132073	95% UCLs (Assuming Gamma Distribution)	
nu hat	16.71219	Approximate Gamma UCL	0.07407
nu star	16.31667	Adjusted Gamma UCL	0.077317
Approx. Chi Square Value (.05)	8.184775		
Adjusted Level of Significance	0.0407	Lognormal Distribution Test	
Adjusted Chi Square Value	7.841049	Shapiro-Wilk Test Statistic	0.310164
		Shapiro-Wilk 5% Critical Value	0.926
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-6.214608		
Maximum of log data	0	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.701595	95% H-UCL	0.010648
Standard Deviation of log data	1.110151	95% Chebyshev (MVUE) UCL	0.012296
Variance of log data	1.232435	97.5% Chebyshev (MVUE) UCL	0.015025
		99% Chebyshev (MVUE) UCL	0.020386
		95% Non-parametric UCLs	
		CLT UCL	0.093717
		Adj-CLT UCL (Adjusted for skewness)	0.130461
		Mod-t UCL (Adjusted for skewness)	0.101384
		Jackknife UCL	0.095653
		Standard Bootstrap UCL	0.091542
		Bootstrap-t UCL	15.43875
RECOMMENDATION		Hall's Bootstrap UCL	5.936087
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.105897
		BCA Bootstrap UCL	0.140448
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.187047
		97.5% Chebyshev (Mean, Sd) UCL	0.251905
		99% Chebyshev (Mean, Sd) UCL	0.379306

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Trichloroethene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	30	Shapiro-Wilk Test Statistic	0.19344
Number of Unique Samples	12	Shapiro-Wilk 5% Critical Value	0.927
Minimum	0.0004	Data not normal at 5% significance level	
Maximum	0.82		
Mean	0.029773	95% UCL (Assuming Normal Distribution)	
Median	0.0025	Student's-t UCL	0.076075
Standard Deviation	0.149256		
Variance	0.022277	Gamma Distribution Test	
Coefficient of Variation	5.01309	A-D Test Statistic	8.748655
Skewness	5.476471	A-D 5% Critical Value	0.860303
		K-S Test Statistic	0.498639
Gamma Statistics		K-S 5% Critical Value	0.17415
k hat	0.285164	Data do not follow gamma distribution at 5% significance level	
k star (bias corrected)	0.278869		
Theta hat	0.104408		
Theta star	0.106764	95% UCLs (Assuming Gamma Distribution)	
nu hat	17.10981	Approximate Gamma UCL	0.058748
nu star	16.73216	Adjusted Gamma UCL	0.061191
Approx.Chi Square Value (.05)	8.479871		
Adjusted Level of Significance	0.041	Lognormal Distribution Test	
Adjusted Chi Square Value	8.141292	Shapiro-Wilk Test Statistic	0.629899
		Shapiro-Wilk 5% Critical Value	0.927
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-7.824046		
Maximum of log data	-0.198451	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.952362	95% H-UCL	0.011068
Standard Deviation of log data	1.263371	95% Chebyshev (MVUE) UCL	0.012243
Variance of log data	1.596107	97.5% Chebyshev (MVUE) UCL	0.015151
		99% Chebyshev (MVUE) UCL	0.020863
		95% Non-parametric UCLs	
		CLT UCL	0.074596
		Adj-CLT UCL (Adjusted for skewness)	0.10371
		Mod-t UCL (Adjusted for skewness)	0.080616
		Jackknife UCL	0.076075
		Standard Bootstrap UCL	0.073395
		Bootstrap-t UCL	4.471915
RECOMMENDATION		Hall's Bootstrap UCL	1.697547
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.084267
		BCA Bootstrap UCL	0.111957
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.148555
		97.5% Chebyshev (Mean, Sd) UCL	0.199952
		99% Chebyshev (Mean, Sd) UCL	0.300911

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-SoPkgLot-InputFile.xls		
Variable:	Vinyl chloride		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	29	Shapiro-Wilk Test Statistic	0.19582
Number of Unique Samples	10	Shapiro-Wilk 5% Critical Value	0.926
Minimum	0.004	Data not normal at 5% significance level	
Maximum	0.79		
Mean	0.032517	95% UCL (Assuming Normal Distribution)	
Median	0.005	Student's-t UCL	0.078539
Standard Deviation	0.145688		
Variance	0.021225	Gamma Distribution Test	
Coefficient of Variation	4.480342	A-D Test Statistic	10.11134
Skewness	5.384721	A-D 5% Critical Value	0.833034
		K-S Test Statistic	0.524097
Gamma Statistics		K-S 5% Critical Value	0.174323
k hat	0.403607	Data do not follow gamma distribution	
k star (bias corrected)	0.384843	at 5% significance level	
Theta hat	0.080567		
Theta star	0.084495	95% UCLs (Assuming Gamma Distribution)	
nu hat	23.4092	Approximate Gamma UCL	0.057707
nu star	22.32089	Adjusted Gamma UCL	0.059785
Approx. Chi Square Value (.05)	12.57752		
Adjusted Level of Significance	0.0407	Lognormal Distribution Test	
Adjusted Chi Square Value	12.14031	Shapiro-Wilk Test Statistic	0.345263
		Shapiro-Wilk 5% Critical Value	0.926
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-5.521461		
Maximum of log data	-0.235722	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-5.054022	95% H-UCL	0.015246
Standard Deviation of log data	0.943676	95% Chebyshev (MVUE) UCL	0.018201
Variance of log data	0.890525	97.5% Chebyshev (MVUE) UCL	0.021856
		99% Chebyshev (MVUE) UCL	0.029036
		95% Non-parametric UCLs	
		CLT UCL	0.077017
		Adj-CLT UCL (Adjusted for skewness)	0.105921
		Mod-t UCL (Adjusted for skewness)	0.083048
		Jackknife UCL	0.078539
		Standard Bootstrap UCL	0.077011
		Bootstrap-t UCL	4.710474
RECOMMENDATION		Hall's Bootstrap UCL	1.719524
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.086621
		BCA Bootstrap UCL	0.113776
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.150441
		97.5% Chebyshev (Mean, Sd) UCL	0.201467
		99% Chebyshev (Mean, Sd) UCL	0.301698

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Benzo[a]anthracene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	24	Shapiro-Wilk Test Statistic	0.681675
Number of Unique Samples	23	Shapiro-Wilk 5% Critical Value	0.916
Minimum	0.013	Data not normal at 5% significance level	
Maximum	0.931		
Mean	0.242175	95% UCL (Assuming Normal Distribution)	
Median	0.184	Student's-t UCL	0.309651
Standard Deviation	0.192876		
Variance	0.037201	Gamma Distribution Test	
Coefficient of Variation	0.796434	A-D Test Statistic	1.885495
Skewness	2.498758	A-D 5% Critical Value	0.754327
		K-S Test Statistic	0.2968
Gamma Statistics		K-S 5% Critical Value	0.180014
k hat	2.185637	Data do not follow gamma distribution at 5% significance level	
k star (bias corrected)	1.94021		
Theta hat	0.110803		
Theta star	0.124819	95% UCLs (Assuming Gamma Distribution)	
nu hat	104.9106	Approximate Gamma UCL	0.313811
nu star	93.13007	Adjusted Gamma UCL	0.319651
Approx. Chi Square Value (.05)	71.8706		
Adjusted Level of Significance	0.0392	Lognormal Distribution Test	
Adjusted Chi Square Value	70.55748	Shapiro-Wilk Test Statistic	0.801938
		Shapiro-Wilk 5% Critical Value	0.916
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.342806		
Maximum of log data	-0.071496	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-1.663971	95% H-UCL	0.369327
Standard Deviation of log data	0.778149	95% Chebyshev (MVUE) UCL	0.442536
Variance of log data	0.605516	97.5% Chebyshev (MVUE) UCL	0.524848
		99% Chebyshev (MVUE) UCL	0.686534
		95% Non-parametric UCLs	
		CLT UCL	0.306934
		Adj-CLT UCL (Adjusted for skewness)	0.328391
		Mod-t UCL (Adjusted for skewness)	0.312998
		Jackknife UCL	0.309651
		Standard Bootstrap UCL	0.305623
		Bootstrap-t UCL	0.378689
RECOMMENDATION		Hall's Bootstrap UCL	0.629424
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.312521
		BCA Bootstrap UCL	0.300687
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.413788
		97.5% Chebyshev (Mean, Sd) UCL	0.488045
		99% Chebyshev (Mean, Sd) UCL	0.633909

General Statistics

Data File	P:\W9-GVTARMYSAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Benzo[a]pyrene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	24	Shapiro-Wilk Test Statistic	0.575878
Number of Unique Samples	23	Shapiro-Wilk 5% Critical Value	0.916
Minimum	0.014	Data not normal at 5% significance level	
Maximum	1.49		
Mean	0.292125	95% UCL (Assuming Normal Distribution)	
Median	0.1835	Student's-t UCL	0.401158
Standard Deviation	0.311662		
Variance	0.097134	Gamma Distribution Test	
Coefficient of Variation	1.066881	A-D Test Statistic	2.611352
Skewness	3.007139	A-D 5% Critical Value	0.760126
		K-S Test Statistic	0.31156
Gamma Statistics		K-S 5% Critical Value	0.180966
k hat	1.609068	Data do not follow gamma distribution	
k star (bias corrected)	1.435712	at 5% significance level	
Theta hat	0.181549		
Theta star	0.20347	95% UCLs (Assuming Gamma Distribution)	
nu hat	77.23527	Approximate Gamma UCL	0.396274
nu star	68.91419	Adjusted Gamma UCL	0.404994
Approx. Chi Square Value (.05)	50.80209		
Adjusted Level of Significance	0.0392	Lognormal Distribution Test	
Adjusted Chi Square Value	49.70833	Shapiro-Wilk Test Statistic	0.791499
		Shapiro-Wilk 5% Critical Value	0.916
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.268698		
Maximum of log data	0.398776	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-1.572426	95% H-UCL	0.4569
Standard Deviation of log data	0.859088	95% Chebyshev (MVUE) UCL	0.5426
Variance of log data	0.738032	97.5% Chebyshev (MVUE) UCL	0.6501
		99% Chebyshev (MVUE) UCL	0.861261
		95% Non-parametric UCLs	
		CLT UCL	0.396767
		Adj-CLT UCL (Adjusted for skewness)	0.438493
		Mod-t UCL (Adjusted for skewness)	0.407666
		Jackknife UCL	0.401158
		Standard Bootstrap UCL	0.395652
		Bootstrap-t UCL	0.557898
RECOMMENDATION		Hall's Bootstrap UCL	0.830899
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.406042
		BCA Bootstrap UCL	0.388396
Use 95% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	0.569429
		97.5% Chebyshev (Mean, Sd) UCL	0.689418
		99% Chebyshev (Mean, Sd) UCL	0.925115

General Statistics

Data File	P:\W9-GVTARMY\SAEPIHH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Benzo[b]fluoranthene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	26	Shapiro-Wilk Test Statistic	0.520049
Number of Unique Samples	25	Shapiro-Wilk 5% Critical Value	0.92
Minimum	0.012	Data not normal at 5% significance level	
Maximum	3.06		
Mean	0.447235	95% UCL (Assuming Normal Distribution)	
Median	0.18675	Student's-t UCL	0.676355
Standard Deviation	0.683954		
Variance	0.467793	Gamma Distribution Test	
Coefficient of Variation	1.529295	A-D Test Statistic	3.497497
Skewness	2.938092	A-D 5% Critical Value	0.775105
		K-S Test Statistic	0.356055
Gamma Statistics		K-S 5% Critical Value	0.176612
k hat	0.96126	Data do not follow gamma distribution	
k star (bias corrected)	0.875986	at 5% significance level	
Theta hat	0.465259		
Theta star	0.51055	95% UCLs (Assuming Gamma Distribution)	
nu hat	49.98551	Approximate Gamma UCL	0.655785
nu star	45.55128	Adjusted Gamma UCL	0.672913
Approx. Chi Square Value (.05)	31.06521		
Adjusted Level of Significance	0.0398	Lognormal Distribution Test	
Adjusted Chi Square Value	30.2745	Shapiro-Wilk Test Statistic	0.795577
		Shapiro-Wilk 5% Critical Value	0.92
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-4.422849		
Maximum of log data	1.118415	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-1.407972	95% H-UCL	0.724027
Standard Deviation of log data	1.048228	95% Chebyshev (MVUE) UCL	0.834028
Variance of log data	1.098781	97.5% Chebyshev (MVUE) UCL	1.017146
		99% Chebyshev (MVUE) UCL	1.376847
		95% Non-parametric UCLs	
		CLT UCL	0.667866
		Adj-CLT UCL (Adjusted for skewness)	0.750451
		Mod-t UCL (Adjusted for skewness)	0.689236
		Jackknife UCL	0.676355
		Standard Bootstrap UCL	0.664032
		Bootstrap-t UCL	0.885329
RECOMMENDATION		Hall's Bootstrap UCL	0.691045
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.681923
		BCA Bootstrap UCL	0.847942
Use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	1.031913
		97.5% Chebyshev (Mean, Sd) UCL	1.284903
		99% Chebyshev (Mean, Sd) UCL	1.781855

General Statistics

Data File	P:\W9-GVT\ARMYSAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Dibenz[a,h]anthracene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	24	Shapiro-Wilk Test Statistic	0.536738
Number of Unique Samples	23	Shapiro-Wilk 5% Critical Value	0.916
Minimum	0.152	Data not normal at 5% significance level	
Maximum	0.515		
Mean	0.213187	95% UCL (Assuming Normal Distribution)	
Median	0.183	Student's-t UCL	0.243324
Standard Deviation	0.086143		
Variance	0.007421	Gamma Distribution Test	
Coefficient of Variation	0.404071	A-D Test Statistic	4.403831
Skewness	2.725324	A-D 5% Critical Value	0.744355
		K-S Test Statistic	0.38149
Gamma Statistics		K-S 5% Critical Value	0.177758
k hat	9.932103	Data do not follow gamma distribution	
k star (bias corrected)	8.718368	at 5% significance level	
Theta hat	0.021464		
Theta star	0.024453	95% UCLs (Assuming Gamma Distribution)	
nu hat	476.7409	Approximate Gamma UCL	0.239793
nu star	418.4817	Adjusted Gamma UCL	0.24179
Approx.Chi Square Value (.05)	372.0498		
Adjusted Level of Significance	0.0392	Lognormal Distribution Test	
Adjusted Chi Square Value	368.977	Shapiro-Wilk Test Statistic	0.617613
		Shapiro-Wilk 5% Critical Value	0.916
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-1.883875		
Maximum of log data	-0.663588	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-1.596769	95% H-UCL	0.236407
Standard Deviation of log data	0.293938	95% Chebyshev (MVUE) UCL	0.267109
Variance of log data	0.0864	97.5% Chebyshev (MVUE) UCL	0.291346
		99% Chebyshev (MVUE) UCL	0.338954
		95% Non-parametric UCLs	
		CLT UCL	0.24211
		Adj-CLT UCL (Adjusted for skewness)	0.252563
		Mod-t UCL (Adjusted for skewness)	0.244954
		Jackknife UCL	0.243324
		Standard Bootstrap UCL	0.241329
		Bootstrap-t UCL	0.270488
RECOMMENDATION		Hall's Bootstrap UCL	0.246013
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.245208
		BCA Bootstrap UCL	0.259479
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	0.289834
or Modified-t UCL		97.5% Chebyshev (Mean, Sd) UCL	0.322999
		99% Chebyshev (Mean, Sd) UCL	0.388145

General Statistics

Data File	P:\W9-GVT\ARMYSAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Indeno[1,2,3-cd]pyrene		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	25	Shapiro-Wilk Test Statistic	0.525069
Number of Unique Samples	24	Shapiro-Wilk 5% Critical Value	0.918
Minimum	0.114	Data not normal at 5% significance level	
Maximum	0.718		
Mean	0.22102	95% UCL (Assuming Normal Distribution)	
Median	0.1825	Student's-t UCL	0.264318
Standard Deviation	0.126538		
Variance	0.016012	Gamma Distribution Test	
Coefficient of Variation	0.572519	A-D Test Statistic	4.262375
Skewness	3.114458	A-D 5% Critical Value	0.746673
		K-S Test Statistic	0.394638
Gamma Statistics		K-S 5% Critical Value	0.17487
k hat	5.710233	Data do not follow gamma distribution	
k star (bias corrected)	5.051672	at 5% significance level	
Theta hat	0.038706		
Theta star	0.043752	95% UCLs (Assuming Gamma Distribution)	
nu hat	285.5116	Approximate Gamma UCL	0.257526
nu star	252.5836	Adjusted Gamma UCL	0.260237
Approx. Chi Square Value (.05)	216.7782		
Adjusted Level of Significance	0.0395	Lognormal Distribution Test	
Adjusted Chi Square Value	214.5198	Shapiro-Wilk Test Statistic	0.673252
		Shapiro-Wilk 5% Critical Value	0.918
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-2.171557		
Maximum of log data	-0.331286	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	-1.599612	95% H-UCL	0.251034
Standard Deviation of log data	0.380158	95% Chebyshev (MVUE) UCL	0.289924
Variance of log data	0.14452	97.5% Chebyshev (MVUE) UCL	0.321719
		99% Chebyshev (MVUE) UCL	0.384175
		95% Non-parametric UCLs	
		CLT UCL	0.262647
		Adj-CLT UCL (Adjusted for skewness)	0.279491
		Mod-t UCL (Adjusted for skewness)	0.266946
		Jackknife UCL	0.264318
		Standard Bootstrap UCL	0.260817
		Bootstrap-t UCL	0.312288
RECOMMENDATION		Hall's Bootstrap UCL	0.296904
Data are Non-parametric (0.05)		Percentile Bootstrap UCL	0.2651
		BCA Bootstrap UCL	0.26152
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	0.331333
or Modified-t UCL		97.5% Chebyshev (Mean, Sd) UCL	0.379066
		99% Chebyshev (Mean, Sd) UCL	0.472828

General Statistics

Data File	P:\W9-GVTARMYSAEPIHH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls		
Variable:	Aluminum		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	31	Shapiro-Wilk Test Statistic	0.951718
Number of Unique Samples	31	Shapiro-Wilk 5% Critical Value	0.929
Minimum	2960	Data are normal at 5% significance level	
Maximum	11600		
Mean	5880	95% UCL (Assuming Normal Distribution)	
Median	5930	Student's-t UCL	6497.502
Standard Deviation	2025.68		
Variance	4103380	Gamma Distribution Test	
Coefficient of Variation	0.344503	A-D Test Statistic	0.186094
Skewness	0.782186	A-D 5% Critical Value	0.746272
		K-S Test Statistic	0.07059
Gamma Statistics		K-S 5% Critical Value	0.157769
k hat	8.961233	Data follow gamma distribution	
k star (bias corrected)	8.115522	at 5% significance level	
Theta hat	656.1597		
Theta star	724.5375	95% UCLs (Assuming Gamma Distribution)	
nu hat	555.5964	Approximate Gamma UCL	6543.62
nu star	503.1624	Adjusted Gamma UCL	6582.658
Approx. Chi Square Value (.05)	452.1342		
Adjusted Level of Significance	0.0413	Lognormal Distribution Test	
Adjusted Chi Square Value	449.4529	Shapiro-Wilk Test Statistic	0.974723
		Shapiro-Wilk 5% Critical Value	0.929
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	7.992945		
Maximum of log data	9.35876	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	8.62248	95% H-UCL	6614.043
Standard Deviation of log data	0.345458	95% Chebyshev (MVUE) UCL	7511.185
Variance of log data	0.119341	97.5% Chebyshev (MVUE) UCL	8214.94
		99% Chebyshev (MVUE) UCL	9597.329
		95% Non-parametric UCLs	
		CLT UCL	6478.435
		Adj-CLT UCL (Adjusted for skewness)	6533.049
		Mod-t UCL (Adjusted for skewness)	6506.021
		Jackknife UCL	6497.502
		Standard Bootstrap UCL	6475.74
		Bootstrap-t UCL	6612.969
RECOMMENDATION		Hall's Bootstrap UCL	6575.781
Data are normal (0.05)		Percentile Bootstrap UCL	6474.194
		BCA Bootstrap UCL	6374.194
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	7465.867
		97.5% Chebyshev (Mean, Sd) UCL	8152.073
		99% Chebyshev (Mean, Sd) UCL	9499.992

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\ISO-SoPkgLot-InputFile.xls					
Variable:	Antimony					
<b>Raw Statistics</b>						
Number of Valid Samples		3				
Number of Unique Samples		3				
Minimum		0.749				
Maximum		4.78				
Mean		2.165				
Median		0.966				
Too Few Observations To Calculate UCLs						

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-SoPkgLot-InputFile.xls		
Variable:	Arsenic		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	31	Shapiro-Wilk Test Statistic	0.97281
Number of Unique Samples	31	Shapiro-Wilk 5% Critical Value	0.929
Minimum	0.545	Data are normal at 5% significance level	
Maximum	6.8		
Mean	3.468581	95% UCL (Assuming Normal Distribution)	
Median	3.42	Student's-t UCL	3.950343
Standard Deviation	1.580394		
Variance	2.497647	Gamma Distribution Test	
Coefficient of Variation	0.455631	A-D Test Statistic	0.910454
Skewness	-0.029227	A-D 5% Critical Value	0.751152
		K-S Test Statistic	0.180213
Gamma Statistics		K-S 5% Critical Value	0.158593
k hat	3.603375	Data do not follow gamma distribution	
k star (bias corrected)	3.276167	at 5% significance level	
Theta hat	0.962592		
Theta star	1.058731	95% UCLs (Assuming Gamma Distribution)	
nu hat	223.4093	Approximate Gamma UCL	4.116822
nu star	203.1224	Adjusted Gamma UCL	4.156396
Approx. Chi Square Value (.05)	171.1384		
Adjusted Level of Significance	0.0413	Lognormal Distribution Test	
Adjusted Chi Square Value	169.5089	Shapiro-Wilk Test Statistic	0.869581
		Shapiro-Wilk 5% Critical Value	0.929
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-0.606969		
Maximum of log data	1.916923	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	1.098616	95% H-UCL	4.566332
Standard Deviation of log data	0.618511	95% Chebyshev (MVUE) UCL	5.467793
Variance of log data	0.382556	97.5% Chebyshev (MVUE) UCL	6.273284
		99% Chebyshev (MVUE) UCL	7.855514
		95% Non-parametric UCLs	
		CLT UCL	3.935468
		Adj-CLT UCL (Adjusted for skewness)	3.933876
		Mod-t UCL (Adjusted for skewness)	3.950095
		Jackknife UCL	3.950343
		Standard Bootstrap UCL	3.922278
		Bootstrap-t UCL	3.929172
RECOMMENDATION		Hall's Bootstrap UCL	3.936763
Data are normal (0.05)		Percentile Bootstrap UCL	3.923871
		BCA Bootstrap UCL	3.817677
Use Student's-t UCL		95% Chebyshev (Mean, Sd) UCL	4.705842
		97.5% Chebyshev (Mean, Sd) UCL	5.241206
		99% Chebyshev (Mean, Sd) UCL	6.292825

General Statistics

Data File	P:\W9-GVT\ARMY\SAEP\HH 2004 REV\ProUCL\SO-SoPkgLot-InputFile.xls		
Variable:	Chromium		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	31	Shapiro-Wilk Test Statistic	0.834843
Number of Unique Samples	29	Shapiro-Wilk 5% Critical Value	0.929
Minimum	3.86	Data not normal at 5% significance level	
Maximum	34.2		
Mean	12.91323	95% UCL (Assuming Normal Distribution)	
Median	10.8	Student's-t UCL	15.16657
Standard Deviation	7.391975		
Variance	54.6413	Gamma Distribution Test	
Coefficient of Variation	0.572434	A-D Test Statistic	0.553218
Skewness	1.619871	A-D 5% Critical Value	0.750265
		K-S Test Statistic	0.122244
Gamma Statistics		K-S 5% Critical Value	0.158445
k hat	3.951011	Data follow gamma distribution	
k star (bias corrected)	3.590161	at 5% significance level	
Theta hat	3.268334		
Theta star	3.596838	95% UCLs (Assuming Gamma Distribution)	
nu hat	244.9627	Approximate Gamma UCL	15.20407
nu star	222.59	Adjusted Gamma UCL	15.34328
Approx.Chi Square Value (.05)	189.0516		
Adjusted Level of Significance	0.0413	Lognormal Distribution Test	
Adjusted Chi Square Value	187.3363	Shapiro-Wilk Test Statistic	0.976177
		Shapiro-Wilk 5% Critical Value	0.929
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	1.350667		
Maximum of log data	3.532226	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	2.426397	95% H-UCL	15.42582
Standard Deviation of log data	0.509308	95% Chebyshev (MVUE) UCL	18.17476
Variance of log data	0.259395	97.5% Chebyshev (MVUE) UCL	20.48946
		99% Chebyshev (MVUE) UCL	25.03623
		95% Non-parametric UCLs	
		CLT UCL	15.097
		Adj-CLT UCL (Adjusted for skewness)	15.50972
		Mod-t UCL (Adjusted for skewness)	15.23095
		Jackknife UCL	15.16657
		Standard Bootstrap UCL	15.09566
		Bootstrap-t UCL	15.73553
RECOMMENDATION		Hall's Bootstrap UCL	16.04315
Data follow gamma distribution (0.05)		Percentile Bootstrap UCL	15.02
		BCA Bootstrap UCL	16.27677
Use Approximate Gamma UCL		95% Chebyshev (Mean, Sd) UCL	18.70027
		97.5% Chebyshev (Mean, Sd) UCL	21.20432
		99% Chebyshev (Mean, Sd) UCL	26.12306

General Statistics

Data File	P:\W9-GVTARMY\SAEP\HH 2004 REV\ProUCL\SO-SoPkgLot-InputFile.xls		
Variable:	Manganese		
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	31	Shapiro-Wilk Test Statistic	0.887092
Number of Unique Samples	29	Shapiro-Wilk 5% Critical Value	0.929
Minimum	62.3	Data not normal at 5% significance level	
Maximum	385		
Mean	167.2	95% UCL (Assuming Normal Distribution)	
Median	146	Student's-t UCL	190.9928
Standard Deviation	78.05092		
Variance	6091.947	Gamma Distribution Test	
Coefficient of Variation	0.466812	A-D Test Statistic	0.378957
Skewness	1.294441	A-D 5% Critical Value	0.747027
		K-S Test Statistic	0.111023
Gamma Statistics		K-S 5% Critical Value	0.158018
k hat	5.499278	Data follow gamma distribution	
k star (bias corrected)	4.988595	at 5% significance level	
Theta hat	30.40399		
Theta star	33.51645	95% UCLs (Assuming Gamma Distribution)	
nu hat	340.9552	Approximate Gamma UCL	191.8571
nu star	309.2929	Adjusted Gamma UCL	193.3334
Approx. Chi Square Value (.05)	269.5431		
Adjusted Level of Significance	0.0413	Lognormal Distribution Test	
Adjusted Chi Square Value	267.4849	Shapiro-Wilk Test Statistic	0.983726
		Shapiro-Wilk 5% Critical Value	0.929
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	4.131961		
Maximum of log data	5.953243	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	5.025523	95% H-UCL	194.1031
Standard Deviation of log data	0.433717	95% Chebyshev (MVUE) UCL	225.2465
Variance of log data	0.188111	97.5% Chebyshev (MVUE) UCL	250.573
		99% Chebyshev (MVUE) UCL	300.3221
		95% Non-parametric UCLs	
		CLT UCL	190.2581
		Adj-CLT UCL (Adjusted for skewness)	193.7406
		Mod-t UCL (Adjusted for skewness)	191.536
		Jackknife UCL	190.9928
		Standard Bootstrap UCL	189.5673
		Bootstrap-t UCL	196.4014
RECOMMENDATION		Hall's Bootstrap UCL	195.6162
Data follow gamma distribution (0.05)		Percentile Bootstrap UCL	190.8065
		BCA Bootstrap UCL	202.2097
Use Approximate Gamma UCL		95% Chebyshev (Mean, Sd) UCL	228.3046
		97.5% Chebyshev (Mean, Sd) UCL	254.7446
		99% Chebyshev (Mean, Sd) UCL	306.6809